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NICOMACHEAN ETHICS IN POLITICAL ECONOMY: THE TRAJECTORY OF THE PROBLEM OF VALUE

Nicholas J. Theocarakis*

National and Kapodistrian University of Athens
Department of Economics

The paper examines the influence of the analysis of economic exchange in Aristotle's *Nicomachean Ethics*, v, on subsequent economic theorizing. The approach is textual and selective. It traces the use of the relevant passage of *NE* v on Scholastic economic thought, the early mercantilists, natural law philosophy, the Scottish Enlightenment, Galiani, Turgot, Smith and Karl Marx. It ends with the abandonment of Aristotelian equivalence of exchange in neoclassical economics.

Introduction

Louis Baeck (2000, 1) in an article entitled «The Mediterranean trajectory of Aristotle's economic canon» notes that

> The history of ideas illustrates with ample evidence that canons, even the ones which enjoyed revivals, should better not be introduced and profiled as timeless universals. Like all human artifacts, even the most promising canons perish. Like all products of the human mind, they are up to a certain degree context-dependent and thus coded by the values, the norms, the paradigmatic modes of thought and the historical consciousness prevalent in the society from which they spring. Canons live a cycle of birth, growth and flourishing, followed by re-interpretation and decline.

This view «presents a challenge to historians of economics who claim an unbroken line of ascent from Aristotle to the latest issue of the *Economic Journal*» (Pullen 2000, 97). Indeed, if methodological absolutism is a problematic approach for the History of Economic Thought, in general, for Aristotle in particular, the attempt to base subsequent economic analysis on his canon is utterly untenable.

For Aristotle was not concerned with economics, as our science is viewed today, but with ethics and politics (Finley 1970). His economic canon is based on two major works: the *Politics*, mainly books I and

* Nicholas J. Theocarakis, Dept. of Economics, National and Kapodistrian University of Athens, Pesmazoglou 8, Athens, 105 59, Greece; e-mail: ntheocar@econ.uoa.gr. I would like to thank Scott Meikle, Tassos Karayiannis and an anonymous referee for their detailed and extremely helpful comments on an earlier draft of this paper. I have also profited greatly from discussions with the late Kosmas Psychopedis, Yanis Varoufakis, Michael Psalidopoulos, Manos Kountouris and Christos Baloglou.

II, and the *Nicomachean Ethics* (NE, hereafter), book v.[1] In *Politics*, the οἰκονομικὴ τέχνη (economic art) is examined as part of the art of the management of the household,[2] the constituent part of *polis*, the City-State. It is, however, in the NE, where the first systematic attempt is being made to arrive at a concept of value, even though it ends with the admission of philosophical defeat. The terms, into which the problem of value has been set, has haunted political economy for centuries. Marx, an ardent admirer of Aristotle's genius, argues that the problem of value in exchange as put by the philosopher is only solvable in the context of capitalist society.

The object of this paper is to trace the trajectory of the problem of value as posed in NE in subsequent generations of economic thinkers. Aristotle has tried to find a *common measure*, which is a property of things and through which things can be equated in exchange. This search for a common measure constitutes the problem of value. This particular *way* in which Aristotle has set up the problem has been followed in similar terms by many economists until the marginalist 'revolution'. This is what I attempt to show in the present paper. What I will *not* attempt is one more interpretation of a passage that has been characterised by many scholars as extremely obscure, and which had given headaches to the best exegetical intellects. Not that is anything wrong, with what Barkley Rosser (2003) has called «Hermeneutic re-Haruspications of Ancient Texts», I am simply not vying for the perfectly respectable office of *Haruspex Maximus*.

My approach will be textual and selective. Instead of describing the use of the NE passage throughout a whole era, I will focus on

[1] Book v is common in *Nicomachean* and *Eudemian Ethics*.

[2] That the name οἰκονομία (*oikonomia*) meant the management of the household was the accepted practice during most part of the 18th century. The ps.-Aristotelian *Οἰκονομικὰ* is rendered in Latin as *de rebus domesticis* by Erasmus in his edition of Aristotle's works [*Aristotelis summi semper viri,* [...], *opera, quaecunque impressa hactenus extiterunt omnia, summa cum vigilantia excussa*, Per Des. Eras. Roterodamum, Basel, Johannes Bebel, 13. Mai 1531], while Rousseau (1755) writes in the article «Economie ou Œconomie» in the *Encyclopédie*: «ce mot vient de oikos, *maison*, & de nómos, *loi*, & ne signifie originairement que le sage & légitime gouvernement de la maison, pour le bien commun de toute la famille. Le sens de ce terme a été dans la suite étendu au gouvernement de la grande famille, qui est l'état. Pour distinguer ces deux acceptions, on l'appelle dans ce dernier cas, *économie générale*, ou *politique*; & dans l'autre, *économie domestique*, ou *particulière*. Ce n'est que de la première qu'il est question dans cet article. Sur l'*économie domestique*, *voyez* PERE DE FAMILLE.» (vol. v, p. 337g). In the ps.-Aristotelian *Economics*, [1345b] we read «there are four types of estate management, [...], royal, satrapic, political [*i.e.*, of a free city] and private. Of these, the royal is the most extensive and simplest [...]. Political economy is very varied but the easiest to conduct, while the private economy is the least extensive and the most varied.» [«οἰκονομίαι δέ εἰσι τέσσαρες, ὡς ἐν τύπῳ διελέσθαι, [...] ϐασιλική σατραπική πολιτική ἰδιωτική. τούτων δὲ μεγίστη μὲν καὶ ἁπλουστάτη ἡ βασιλική, [...] ποικιλωτάτη δὲ καὶ ῥᾴστη ἡ πολιτική, ἐλαχίστη δὲ καὶ ποικιλωτάτη ἡ ἰδιωτική.»] See also ANDREADÈS 1992 [1928]. For the term, *oikonomia* see SINGER 1958 and CANNAN 1929.

representative thinkers of each period and see how – in the context of their own thought – the passage of *NE* is transformed. The thinkers that I will examine are Thomas Aquinas among the Scholastics, Bernardo Davanzati and Antoyne de Montchrestien of the mercantilists, and Hugo Grotius and Samuel von Pufendorf of natural law philosophers. Of Enlightenment figures Ferdinando Galiani represents the Neapolitan Enlightenment, Jacques Turgot the French, Francis Hutcheson and Adam Smith the Scottish. I will end up with remarks on Karl Marx and neoclassical analysis.

A short preview of the paper is in order. The subject matter of book v of *NE* is justice. A particular type of justice which concerns voluntary transactions is based on reciprocity. Reciprocity makes possible the association of persons. For a voluntary transaction to be just, and indeed, in order to take place, the persons involved must exchange things of equal value. This equality or equivalence of exchanged values is central to Aristotle's analysis. This equality, in turn, presupposes the existence of a common measure. This common measure, according to Aristotle, is «need» (*chreia*), which brings the two parties together in the first place. Money may have an important role as medium of exchange, but it is a representative of need, not the common measure of things. Aristotle, however, ends this section by acknowledging that, philosophically speaking, there is no way in which such a common measure can be found, although *in practice* the equality of exchange is achieved.

Aristotle's analysis resurfaced in the 13th century through the writings of the Scholastics, which are *par excellence* Aristotelian. Although the economic thought of the Scholastics, particularly their doctrine of 'just price', is ethical and pre-scientific, in their commentaries of Aristotle we find the seeds of two strands in the theory of value. The first strand is a subjective theory of value through the re-interpretation of 'need' as 'utility'. The second strand is an 'objective' theory of value, through a concept of 'labour and expenses' as the basis for equivalent exchange. But these strands are not separate in Scholastic thought and both interpretations are examined in the context of the 'community' which provides a measure of a 'common estimation' of value.

During the mercantilist period, the ethical aspect of Scholastic economic thought has subsided. Analytically, little progress is being made and Aristotle influences mercantilist thinkers mainly through his theory of money and the notion of reciprocity. 'Need' becomes 'utility', but no steps are taken to show how utility is transformed into value. The language of analysis retains, however, Aristotelian features.

Another thread of the Aristotelian analysis of value is picked up by the natural law philosophers, mainly Grotius and Pufendorf. Their aim is to determine the value of things exchanged in a private contract. They restate the problem of value in Aristotelian terms. Pufendorf even attempts to define a «moral quantity» that could solve the problem of commensurability. Their explanations, however, contain elements of both 'theories' of value, subjective and objective. Natural law philosophers continue through the moral philosophers of the Scottish Enlightenment. In Francis Hutcheson, Aristotle appears through his *Politics*, and the definition of *Oeconomicks* in Hutcheson is purely Aristotelian. An interesting feature in Hutcheson´s analysis is that 'need' (*chreia*, *indigentia*) appears as «demand». His theory of value is a combination of utility and difficulty of acquisition. It is only in Adam Smith, that an analytical advance is being made. Smith uses the Aristotelian concepts of justice – via the Natural Law philosophers – but he does not mention Aristotle in his statement of the problem of value. He keeps, however, the notion of reciprocity, the equivalence of exchange and the ability of the «higgling of the market» to equalize in practice the values of the different types of labour.

Two other figures of Enlightenment are influenced by Aristotle. Galiani mentions *NE*, v explicitly in order to refute Aristotle's theory of money, but his theory of value is expressed in terms of proportion not between two persons, as in Aristotle, but between two things in a person's mind. More intriguing is the case of Turgot. In Turgot's economic writings references to Aristotle are absent. Nevertheless, his analysis of value follows closely the steps of the Stagirite, to the extent that his analysis appears as a commentary to *NE*. Even his final conclusion of the inability to find analytically a measure of value is highly reminiscent of Aristotle's.

I conclude my analysis with Marx. The German philosopher is explicit about the use of *NE*, v in his analysis. He comments on Aristotle's text quoting directly from it in his analysis of the equivalent form of value. His view is that Aristotle could not arrive at a theory of value because the society in which he lived did not allow him to see that it was abstract human labour that equalized the values of commodities. Contrary to Marx, the restatement of the theory of value by neoclassical theory is done in distinctly non-Aristotelian terms. The equivalence of exchange is abandoned. Indeed, Ludwig von Mises sees «modern economics» as freed from Aristotle's «inveterate fallacy».

A question that arises is whether the influence of Aristotle is real, or whether the nature of the problem poses itself inescapably in terms that were suggested by the first philosopher who systematically dealt with it. Particularly, in cases where references to the work of Aristotle are not explicit, similarity of analysis might simply indicate that this is a common understanding of the times rather than a direct influence.[1] I confess that unscrambling the puzzle of intellectual influences with a perfect degree of certainty is well nigh impossible. I submit that even a direct reference to *NE* might not constitute proof of a true and real influence, but an after the fact realization that a similar thing was said by Aristotle that it is put there either as a display of erudition or as an authoritative support of one's argument. On the other hand, even if reference to Aristotle's work is not explicit, the set up of the problem might be so close to that of the Stagirite that we cannot reasonably doubt his influence. This is clearly, I believe, the case with Turgot. Moreover, when we examine the influence of a classical text over such a long time, from the 13th to the 19th century, we must always keep in mind that – as Baeck (2000, 1) has cautioned us – we cannot treat it as a «timeless universal». The relation of scholars with the classical texts is different in different periods and their understanding of the text is different, conditioned by their times. This understanding is moreover influenced by the analysis of the text that preceded them. For example, the Scholastic commentaries on Aristotle have influenced the interpretation of the text by Enlightenment scholars with religious training, such as Galiani and Turgot. Equally, the influence of Aristotle on Hutcheson and Adam Smith cannot be separated by the way Natural Law philosophers had read the text.

I have, therefore, adopted an approach that follows closely the texts of the period, hoping that the reader will find my way of looking at them reasonably convincing.

The Text of Nicomachean Ethics

The subject matter of the fifth book of *NE* is justice. Aristotle distinguishes between two kinds of justice, distributive and corrective. Distributive justice (διανεμητικὸν δίκαιον) concerns the distribution of honours and money among citizens (*NE*, 1130b30). This kind of justice applies the principle of geometrical proportion, where the ratio of the things to be distributed is equal to the ratio of the worth of the persons to whom they are distributed. So if persons A and B receive money or honours a and b, distributive justice requires that $A/B = a/b$. The worth of individuals differs according to the organization of

[1] I thank an anonymous referee for this point.

the state, since the democrats, the aristocrats and the oligarchs apply different criteria.

The second kind of justice concerns the «corrective principle in private transactions» (τὸ ἐν τοῖς συναλλάγμασι διορθωτικόν) (*NE*, 1131a1). Transactions are subdivided into voluntary (ἑκούσια) and involuntary (ἀκούσια), the latter being further subdivided into furtive (λαθραῖα) and violent (βίαια). In corrective justice the applicable mathematical principle is that of «arithmetical proportion», *i.e.*, of arithmetical mean. If there has been damage to either party, the law or the judge will attempt to rectify it. It is as if when two rectilinear segments are unequal, they can be equated by subtracting half of their difference from the larger one and adding it to the other.

After analyzing these two principles of justice, Aristotle, as if he is deviating from his exposition, notes that for the Pythagoreans, justice is merely τὸ ἀντιπεπονθὸς, *i.e.*, retaliatory justice or reciprocity [*NE*, 1132b21 *et seq*.]. Retaliatory justice is different from distributive and corrective justice.[1] He continues [1132b31-32]:

> But in the associations where there is exchange, justice in the form of reciprocity maintains the bond: reciprocity, that is, on the basis of proportion, not on the basis of equality. The very existence of the state depends on proportionate reciprocity.

And then we go at the heart of the problem of economic exchange: [1133a5-14]:

> Now proportionate return is secured by diagonal conjunction. Let A be a builder, B a shoemaker, C a house, D a shoe. The builder, then, must get from the shoemaker the latter's work, and must himself give him in return his own. If, then, first there is proportionate equality of the works, and then reciprocation takes place, the result we mention will be effected. If not, the bargain is not equal, and does not hold; for there is nothing to prevent the work of the one being more than that of the other; they must therefore be equated [δεῖ οὖν ταῦτα ἰσασθῆναι].

He proceeds (*NE*, 1133a14-19):

> And this is true of the other arts also; for they would have been destroyed if what the patient suffered had not been just what the agent did, and of the same amount and kind. For it is not two doctors that associate for exchange, but a doctor and a farmer, or in general people who are different and unequal; but these must be equated. This is why all things that are exchanged must be somehow comparable.

In order to solve the problem of comparability money has been invented (*NE*, 1133a19-25):

> It is for this end that money has been introduced, and it becomes in a sense a mean; for it measures all things, and therefore the excess and the deficiency - how many shoes are equal to a house or to a given amount of food. As therefore a builder is to a shoemaker, so must such and such a number of shoes be to a house, or to a given

[1] For a discussion see Judson 1997.

quantity of food. [δεῖ τοίνυν ὅπερ οἰκοδόμος πρὸς σκυτοτόμον, τοσαδὶ ὑποδήματα πρὸς οἰκίαν ἢ τροφήν]. For if this be not so, there will be no exchange and no association. And it will not happen, unless these are somehow equal.

The phrase «as a builder is to a shoemaker, so must such and such a number of shoes be to a house» has created many problems of interpretation. This is the prerequisite for exchange and for association. Thus the problem of equality poses itself anew (*NE*, 1133a25-31):

All must therefore be measured by some one thing, as was said before. Now this is in truth need [χρεία, *chreia*], which holds everything together, since if men did not need anything, or needed them in a different way, there would be either no exchange or not the same exchange; but money has become by convention a sort of representative of need; and this is why it has the name 'money' [νόμισμα, *nomisma*] – because it exists not by nature but by human convention (νόμῳ) and it is in our power to change it and make it useless.

Aristotle introduces a new concept as the common measure of things: «need» which holds everything together, the natural standard or measure (φύσει μέτρον). But by human convention [νόμῳ] money becomes a sort of representative of need. Aristotle then repeats the necessity of equalization (*NE*, 1133a31-1133b6):

There will, then, be reciprocity when there has been equated, [ἔσται δὴ ἀντιπεπονθός, ὅταν ἰσασθῇ,] so that as farmer is to shoemaker, the shoemaker's work is to that of the farmer's. But we must not bring them into a figure of proportion when they have already exchanged (otherwise one extreme will have both excesses), but when they still have their own goods. Thus they are equals and associates just because this equality can be effected in their case. Let A be a farmer, C food, B a shoemaker, D his equated work [τὸ ἔργον αὐτοῦ τὸ ἰσασμένον]. If it had not been possible for reciprocity to be thus effected, there would have been no association of the parties. [εἰ δ' οὕτω μὴ ἦν ἀντιπεπονθέναι, οὐκ ἂν ἦν κοινωνία.]

Then he repeats that need is a prerequisite for exchange and explains the role of money (*NE*, 1133b10-16):

For the future exchange, that if we do not need a thing now, we shall have it whenever we do need it, money stands as it were our guarantee; for it must be possible for us to get what we want by bringing the money. Money, however, suffers itself from the same problem: it cannot always stay equal; it tends, however, to remain so in most cases. This is why all goods must have a price set on them; for then there will always be exchange, and if so, association.

Then he emphasizes the role of money as a measure or standard (*NE*, 1133b16-18):

Money, then, acting as a kind of measure, equates goods by making them commensurate; for neither would there have been association if there were not exchange, nor exchange if there were not equality, nor equality if there were not commensurability. [οὔτε γὰρ ἂν μὴ οὔσης ἀλλαγῆς κοινωνία ἦν, οὔτ' ἀλλαγὴ ἰσότητος μὴ οὔσης, οὔτ' ἰσότης μὴ οὔσης συμμετρίας.]

Thus, money offers commensurability, which is the ultimate foundation of association or society. Having said that, however, he admits that *philosophically* he had reached an impasse (*NE*, 1133b18-20):

Now in truth, it is impossible that things differing so much should become commensurate, but with reference to need they may become so sufficiently. [τῇ μὲν οὖν ἀληθείᾳ ἀδύνατον τὰ τοσοῦτον διαφέροντα σύμμετρα γενέσθαι, πρὸς δὲ τὴν χρείαν ἐνδέχεται ἱκανῶς.]

Commensurability is philosophically impossible for things that have so different qualities, such as a shoe and a house. This is achieved only for practical purposes in reference to need. He concludes then his analysis by mentioning the role of money (*NE*, 1133b20-28):

There must, then, be a unit, and that fixed by agreement (for which reason it is called money [νόμισμα]); for it is this that makes all things commensurate, since all things are measured by money. Let A be a house, B ten minae [units of currency], C a bed. A is half of B, if the house is worth five minae or equal to them; the bed, C, is a tenth of B; it is plain, then, how many beds are equal to a house, *viz*. five. That exchange took place thus before there was money is plain; for it makes no difference whether it is five beds that exchange for a house, or the money value of [ὅσου] five beds.

Therefore, there must be a common measure, established by convention and this is money. Nevertheless, money is not a prerequisite for exchange, since you can have an exchange, even if you do not have the medium of money.

Interpretations of the passage

The above passage (1133a5-b28) of *NE* has been the object of numerous comments by philologists, philosophers, theologians, historians and economists. It has been considered one of the most obscure texts ever written by Aristotle (Finley 1970, 9; *cf.* Meikle 1995, 1). For some it has no economic significance whatsoever. Schumpeter (1954, 57, but *cf.* his 2003 [1912], 11-13) calls Aristotelian theory «slightly pompous common sense», while for Finley (1970, 1987) Aristotle never intended to describe the actual price setting mechanism or attempted an economic analysis. On the contrary, he wanted to formulate a purely ethical normative theory. For Rothbard (1995, 16) this passage is «a prime example of descent into gibberish» and «this particular exercise should be dismissed as an unfortunate example of Pythagorean quantophrenia». Others see the precursor of neoclassical value theory or the labour theory of value (Kauder 1953; Anikin 1975, 22-28; Blaug 1991; Meikle 1995; Judson 1997). Soudek (1952) sees W. S. Jevons in this passage, while Jaffé (1974), more imaginatively, discerns Edgeworth's contract curve. There are, however, a number of questions related to this passage:

First, what is the mathematical concept of reciprocal proportion? Namely, what is the technical analytical relationship of the ratio between builder and shoemaker and the ratio between house and shoes? Is it an arithmetical, a geometrical or a different kind of proportion? All possible solutions have been offered here by Scholastics, philologists, philosophers and economists. The confusion is even greater because the notion of *antipeponthos*, (reciprocity) has also been used in a mathematical sense.[1]

Second, what is the meaning of the phrase «As a builder is to a shoemaker, so must such and such a number of shoes be to a house». Since in commutative justice the value of persons is not taken into account, what does this relationship stand for? Moreover, if the value of persons is taken into account in this phrase, what is this measure of value? Is it their place in Aristotle's value hierarchy, the quality and quantity of labour (or expenses) of each of the traders, their position in a social hierarchy, the size of *chreia* (need) or what else?

Third, how does *chreia* (need) enter as a common standard of things? What is *chreia*? Does it stand for absolute necessity, or is it 'demand'? Indeed, rendering *chreia* as «demand» can be seen in Grant's edition of *The Ethics of Aristotle* (1874) and in the time-honoured translations of NE by W. D. Ross and H. Rackham.[2] Moreover, does *chreia*

[1] There are many interpretations. See Jackson 1879, 86 *et seq*. Soudek (1952) evokes the notion of a third kind of proportion by referring to the Pythagorean Archytas of Taras. *Cf.* Lowry, ch. VII. This is an extremely implausible interpretation. Meikle (1995), who offers the most convincing interpretation of Aristotle's economic thought, is less persuasive here. *antipeponthos* is the perfect participle of the verb ἀντιπάσχω (*antipascho*). For the meaning of the verb see The Liddell-Scott *Greek-English Lexicon*. In the ps.-Aristotelian *Mechanics* the term has a mathematical notion. [(Μηχ.) ὃ οὖν τὸ κινούμενον βάρος πρὸς τὸ κινοῦν, τὸ μῆκος πρὸς το μῆκος ἀντιπέπονθεν. «as the moving weight stands to the weight that is moved, the length stands to length reciprocally», cited in Jackson 1879, 93; my translation. Varro, in *Tractatus de motu* (1584) writes, «Duarum virium connexarum quarum (si moveantur) motus erunt ipsis ἀντιπεπονθῶς proportionales, neutra alteram movebit, sed equilibrium facient», cited in Whewell 1837, vol. 2, 39. In Euclid's *Elements,* the definition of «reciprocal figures» (ἀντιπεπονθότα σχήματα) in the sixth book (Def.6.2) has been found problematic by Robert Simpson (1781). In the *Elements* the term, however, is a frequent one (*Euclidis Elementa*, ed. by J. L. Heiberg, vol. 2, books V-IX, 2nd edn. 1970, Leipzig, Teubner). Also in Archimedes, *Archimedis Opera omnia: Cum commentariis Eutocii*, ed. by J. L Heiberg, 3 vols, Stuttgart, Teubner, 1915 (1972) –. In English, the term «reciprocal» has been coined by Sir Henry Billingsley in his translation of Euclid («Reciprocall figures are those, when the termes of proportion are both antecedentes and consequentes in either figure». *The Elements of Geometrie of the most auncient Philosopher Euclide of Megara* [*sic*], London, John Daye, 1570). For the notion in Scholastic literature, see Kaye 1998. The term in Latin is translated in many different ways: from *contrapassum* in Grosseteste and Moerbecke (*cf.* Dante, *Inferno*, canto XXVIII, line 42), to *retaliatio* in Averroes, and *perpessio mutua et reciproca* in Guilielmo Du Val, [*Aristotelis Opera Omnia quae extant, graece & latine, veterum ac recentiorum interpretum,* Lutetiae Parisiorum (Paris), Typis Regiis, apud Societatem Graecarum Editionum, 1629].

[2] Aristotle 1925 (Ross), 1926 (Rackham). In the revision of Ross' transl. by J. L. Ackrill and J. O. Urmson (Aristotle 1980) the rendering of *chreia* is not mentioned among the problems of translation. On translating «*indigentia*» as «demand» in Hutcheson, see below.

as a measure concern the 'value in use' of a good, or is it simply that force that brings together the trading parties, without assuming the interpretation of an intrinsic quality of the goods?

Fourth, is the analysis in NE purely normative, *i.e.*, how the exchange *should* be conducted, or is it positive, *i.e.*, how the exchange *is* actually carried out? Does it concern an isolated exchange, or an exchange in a market framework?

These questions will not be answered here, at least explicitly. This would require a very long essay commenting on twenty three centuries of comments by paraphrasts, scholiasts, philologists, philosophers and economists. We consider, however, as given, that for Aristotle the exchange is between goods of equal value and that money is not the true or natural measure of goods, but its representative (ὑπάλλαγμα). We also take as given that he considered a philosophically acceptable solution of the problem of value to be beyond his philosophical categories. In the rest of this paper we will show how these passages from NE were used in economic analysis in the centuries that followed starting with the Scholastics.

The Scholastics

Aristotle resurfaced in the Western intellectual tradition in the 13th century. The West knew Aristotle mainly through translations from Arab sources, but such texts were theologically suspect and could not be used formally.[1] Averroes (1126-1198) has provided an extended commentary on large part of the Aristotelian corpus,[2] but the Scholastics could start work on Aristotle only after proper translations from the Greek original of NE have been made in the middle of the 13th century.[3] A long and productive tradition of commentaries to NE starts with Albertus Magnus (1206-1280) to be followed by his disciple, Thomas Aquinas (1225-1274) and all the major Scholastics.[4] S. Todd

[1] This is not strictly speaking true. Boethius has already translated most of the *Logic* from the Greek. There was a 12th-century translation of NE, II and III, and the whole book was translated early in the 13th century, although only Book I circulated. See Marenbon 1998, 226.

[2] Averroès 1562-1574. The comment on NE is in Averroès 1562. Michael Scotus has translated in the 1220s a number of Averroes' commentaries, including the «great» ones, while, later, he and others translated the «middle» commentaries including the NE (Marenbon 1998, 226-227).

[3] By Robert Grosseteste (1175-1253), bishop of Lincoln, in *c.* 1246-1247. Few years later the *Translatio Lincolniensis* was revised by William of Moerbeke (1215-1286), who in 1260 translated Aristotle's *Politics* into Latin, together with a translation or retranslation of most of the Aristotelian corpus. For economic thought in Byzantium, see Laiou 2002.

[4] For example, Albertus Magnus, *Super ethica commentum et quaestiones*, Thomas Aquinas, *Sententia libri Ethicorum,* Walter Burley (Burlaeus *c.* 1275 *post* 1343), *Expositio in Aristotelis Ethica Nicomachea*, Albert of Saxony (1316-1390), *Expositio super libri ethicorum*, John Buridan (*c.* 1300-

Lowry (1987, 303-304, fn. 5) reports a source that until the end of the 16th century there were twelve thousand comments on various works of Aristotle. Scholastic economic thinking, even though it was based on patristic doctrine and the Roman law, was definitely Aristotelian in its expression.

The Scholastics, as theologians, had an ethical concept of value. The first question they posed was how it is possible that the value of things is different from their position in the divine hierarchy. Aristotle, of course, cannot help them in such a quest, even though his authority has been claimed on this issue too.[1] The answer is found in a passage in St. Augustine's *City of God*, which became very influential in scholastic thought. Augustine notes that we prefer to have money than fleas, even though the latter are living creatures.[2] The value of things for people does not follow the divine order, but the subjective estimation people have for them. Augustine through Aquinas is matched to Aristotle. The *doctor angelicus* commenting on NE, 1133a25-31 writes:

> But this one standard which truly measures all things is demand (*indigentia*, need). This includes all commutable things inasmuch as everything has a reference to human need. Articles are not valued according to the dignity of their nature, otherwise a mouse, an animal endowed with sense, should be of greater value than a pearl, a thing without life. But things are priced according as men stand in need of them for their own use. [*sed rebus pretia imponuntur, secundum quod homines indigent eis ad suum usum*]
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> (*Sent. Ethic.*, *liber* V, *lectio* IX, *nota* 3, 1993 [1964], 312)[3]

1358), *Quaestiones in decem libros ethicorum*, Richard Kilvington (*c.* 1302-1361), *Quaestiones morales super libros ethicorum*, Gerardus Odonis (†1348), *Expositio in Aristotelis ethicam*, Nicole Oresme (†1382), *Le livre d'éthique d'Aristote*.

[1] CASE 1585 in his comments on the fifth book of NE refers to the second book of *Metaphysics.*

[2] AUGUSTINE, *De Civitate Dei*, *lib.* XI, *cap.* XVI (1887, 214):

> These are the gradations according to the order of nature; but according to the utility each man finds in a thing, there are various standards of value, so that it comes to pass that we prefer some things that have no sensation to some sentient beings. […]. Who, *e.g.*, would not rather have bread in his house than mice, gold than fleas? [*Quis enim non domui suae panem habere quam mures, nummos quam pulices malit?*] But there is little to wonder at in this, seeing that even when valued by men themselves (whose nature is certainly of the highest dignity), more is often given for a horse than for a slave, for a jewel than for a maid. Thus the reason of one contemplating nature prompts very different judgments from those dictated by the necessity of the needy, or the desire of the voluptuous; for the former considers what value a thing in itself has in the scale of creation, while necessity considers how it meets its need; reason looks for what the mental light will judge to be true, while pleasure looks for what pleasantly titillates the bodily sense.

For the influence of this passage on the Scholastics see DEMPSEY 1935, part III.

[3] *Cf.* the passage from Jean Buridan «*In justitia commutativa non estimatur pretium commutabilium secundum naturalem valorem ipsorum, sic enim musca plus valeret quam totus aurum mundi*». [In commutative justice we do not estimate the price of commutable things according to their natural value. If this were so, a fly would have a greater value than all the gold in the world.], cited in O'BRIEN 1920, 109, fn. 2).

The value of things is then measured according to the degree it satisfies human need. But need is related to the equivalent exchange of goods. Aquinas explains:

> [Aristotle] says first that the norm measuring all things by need according to nature [*naturaliter*], and by currency according to human convention will then become reciprocation [*contrapassum*], when everything will be equated in the way just mentioned. This is done in such a manner that as the farmer (whose work is raising food for men) excels the shoemaker (whose work is making sandals), in the same proportion [*secundum numerum*] the work of the shoemaker exceeds in number the work of the farmer, so that many sandals are exchanged for one bushel of wheat. Thus when exchange of things takes place, the articles to be exchanged ought to be arranged in a proportional figure with diagonals [*in diametralem figuram proportionalitatis*], as was stated previously. If this was not done, one extreme would have both excesses [*superabundantia*]; if a farmer gave a bushel of wheat for a sandal, he would have a surplus of labour in his product and would have also an excess of loss because he would be giving more than he would receive. But when all have what is theirs, they are in this way equal and do business with one another because the equality previously mentioned is possible for them. [*Sed quando omnes habent quae sua sunt, sic sunt aequales et sibiinvicem communicant, quia praedicta aequalitas potest fieri in ipsis*].
>
> (*Sent. Ethic.*, v.ix.6, 1993 [1964], 313)

Indeed, the condemnation of profit in a transaction is explicit. The exchange is an exchange of equivalent values. The Aristotelian diametrical conjunction is necessary, because otherwise one part would have had *superabundantia* over the other.[1] Thus the notion of *indigentia* is combined with the notion of the *work* of the trading parties. It is characteristic that in Grosseteste's translation «*chreia*» (need) was translated as «*opus*» before it was revised by William of Morbecke to «*indigentia*» (Kaye 1998, 68, *cf.* Finley 1970). Nevertheless, both Albertus Magnus and Thomas Aquinas while they stress the role of *indigentia* in their commentaries, in their discussion of diametrical conjunction they offer the theory of labour and expenses, which is not mentioned in Aristotle.

Albertus writes that «the arts would be destroyed if each one did not receive at least his labour and expenses as recompense».[2] And Aquinas comments that «in order then to have [just] exchange, as many sandals must be exchanged for one house or for the food required for one man, as the builder or the farmer exceeds the shoemaker in his labour and costs [expenses] (*labore et expensis*). If this is

[1] St. Jerome used the term *superabundantia* in the cases where someone charged interest for a loan (Kaye 1998, 81). For the equality in exchange see in particular Aquinas, *Summa Theologiae,* II^{a}-II^{æ}, q. 77). Indeed, the ban on interest charging (*usura*) was based on the fact that it disrupted the equality of exchange.

[2] *Super ethica commentum et quaestiones,* Cited in Kaye 1998, 65. It is, of course, the rendering of the Aristotelian «ἀνῃροῦντο γὰρ [*sc.* αἱ τέχναι]» (*NE*, 1133a14-15).

not observed, there will be no exchange of things, and men will not share their goods with one another» (*Sent. Ethic.*, v.ix.2)

Thus, the Aristotelian *chreia* (need) assumes a central position in the determination of *justum pretium* in Scholastic thinking.[1] There are however, four points that have to be stressed in that interpretation.

First, most Scholastics from Albertus Magnus onwards give also a labour plus costs interpretation in the notion of the value of goods.

Second, the exchange of goods is perceived as an exchange of equivalents in which neither party should profit.

Third, the notion on *indigentia*, as it is obvious by comments of Albertus, Aquinas and other Scholastics, but notably by Buridan (*c.* 1300-1358), is not the need of any particular person, but reflects the common estimate that the community has on this things: «The measure of vendible things is the *common* human need», writes Buridan.[2] He explains that «need of this or that person does not measure the value of the commutable things, but the common need of those who can trade between them».[3] In that respect, this common need assumes a special sense. The *justum pretium* becomes the price that is necessary for those who bring the goods to the market and those who buy them to retain the position in an ideal social hierarchy. For Langenstein the price that the prince should set should be such that the craftsmen and the merchants could maintain their status and the poor would not be deprived of necessities of life.[4]

Fourth, the Scholastics from Albertus Magnus up to the 16th century (*e.g.* Case 1585) tried to elaborate on the notion of *indigentia*, attributing to it meanings that included utility and desirability. Thus, starting from Albertus Magnus (Baeck 2000, 13-14) «*usum vel utilitatem vel indigentiam*» to the Franciscans Petrus Johannes Olivi (1248-1298), San Bernardino da Siena (1380-1444) and San Antonino, bishop of Florence

[1] There is a large literature on the notion of just price. The old historiography (Roscher 1874, 18-22; Cunningham 1882; Ashley 1923; O'Brien 1920; also Hollander 1965; *cf.* Wilson 1975) assumed that the just price aimed at preserving a person's position in the social hierarchy. A different school of thought sees in the just price the «normal competitive price» (Schumpeter 1954, 93; Dempsey 1935; de Roover 1955, 1958; Worland 1977; Langholm («The market price was considered all along a just price», 1982, 281), Colish 1997, ch. 25). For the influence of Roman Law on the determination of the just price doctrine see Kaulla 1940 [1936].

[2] My emphasis. «*rei venalis mensura est communis indigentia humana*» cited in de Roover 1955, 164. For the notion of common estimate in Albertus Magnus and Aquinas, see Dempsey 1935.

[3] «*Indigentia istius hominis vel illius non mensurat valorem commutabilium; sed indigentia communis eorum qui inter se commutare possunt*». In O'Brien 1920, 110, fn. 2).

[4] «Dabei ist der Mittelweg zwischen den Extremen zu suchen: zwischen solcher Niedrigkeit des Preises, daß die *artifices, rustici, mercatores se eorum laboribus convenienter sustentare non possent*, und solcher Höhe, daß die *homines pauperes et communes, quorum laboribus omnes vivere oportet, necessaria sibi non possent comparare*.» (Roscher 1874, 19).

(1389-1459), we see that the value of goods is attributed to three factors: (a) their internal worth or virtue, (b) their scarcity or difficulty of acquiring them and (c) their desirability and ability to satisfy from a subjective viewpoint. These factors were named *virtuositas*, *raritas*, *complacibilitas*.[1] Still, however, these concepts were subsumed under the concept of *communis aestimatio*.[2]

Nicomachean Ethics in the mercantilist literature

Scholastic thought was normative and ethical rather than analytic. It aimed at providing a guide according to which commercial transactions should be carried out in the context of a society that was changing. In the Scholastic view, profit from trade was sin and it was tolerated only if it served the good of the community. The Scholastics agreed with the Aristotelian condemnation of trade and usury.[3]

In the next period, two parallel developments affected the use of Aristotelian concepts in the analysis of economic categories. The first development was the advance of the natural sciences that led to the condemnation of Scholasticism and Aristotle. Thus, while in Oxford the first book to be published by the new University printing press in 1585 was John Case's commentary on *NE*, twenty years later, Francis Bacon in his *Advancement of Learning* (2002 [1605]), draws his sword against the

> Schoolmen: who having sharp and strong wits, and abundance of leisure, and small variety of reading, but their wits being shut up in the cells of a few authors (chiefly Aristotle their dictator) as their persons were shut up in the cells of monasteries and colleges, and knowing little history, either of nature or time, did out of no great quantity of matter and infinite agitation of wit spin out unto those laborious webs of learning which are extant in their books
>
> (140)

> ...For as water will not ascend higher than the level of the first springhead from whence it descendeth, so knowledge derived from Aristotle, and exempted from liberty of examination, will not rise again higher than the knowledge of Aristotle.
>
> (144)

Even more vehemently Thomas Hobbes in his *Leviathan* accuses

[1] Antoninus of Florence (*Summa*, ii.1, 16) in O'Brien 1920, 110. Olivi's works are *Tractatus de emptionibus et venditionibus, de usuris, de restitutionibus* and *Quodlibet I*, ch. 16 and 17. See Baeck 1994, 1999; Shoaf 1983, ch. 12; Kaye 1998, ch. 5. San Bernardino did not refer to Olivi since the latter was under a cloud for heretical views. For the analysis of these concepts in San Antonino see Dempsey 1935, 483-485.

[2] Thus, San Bernardino notes that «*aestimatio a communitatibus civilibus facta communiter*». Cited in de Roover 1958, 164.

[3] On the influence on Aristotle's *Politics* on the Scholastic condemnation of trade and usury see O'Brien 1920, 16-19, 146, 142-144, and Baeck 2000. See in particular Aquinas, *ST*, II^{a}-II^{æ}, q. 77.

Scholasticism that «for the study of philosophy it hath no otherwise place than as a handmaid to the Roman religion: and since the authority of Aristotle is only current there, that study is not properly philosophy (the nature whereof dependeth not on authors), but Aristotelity».[1]

The second development was the change in the morality of society brought about by the advances of the merchant class. Trade, profit and, and to a lesser extent, usury are not any longer condemned in the new society. This is typical of most mercantilist theories. They are characterised, to use Heckscher's (1994, II, 285) apt formulation, by a «two-fold amorality», as to the means and as to the ends. Profit from trade is now a reason for praise (Mun 1664). Emancipation from morality is only partial, however, since few authors, such as Hobbes and Mandeville, assume that human nature is devoid of altruistic qualities (Saether 2000).

Nevertheless, *analytically* little progress has been made in the theory of value. The difference is in slant rather than substance. Two remarks must be made. The first is that the notion of exchange of equivalents values is not abandoned. It is, however, acknowledged that there is room for *superabundantia*. The reality of trade, where profit is realized in the difference between purchase price and sale price, makes one party to profit from the trade. Exchange was perceived, in modern terminology, as a zero-sum game (Heckscher 1994, II, 25-28; Pribram 1983). When the mercantilist theories assume – as Marx remarked – their scientific form with James Steuart in 1767, this *superabundantia* appears as «profit upon alienation», which forms a constituent part of the price of goods.[2] We have a Scholastic Aristo-

[1] Hobbes 1991 [1651], 461. See Meikle 1995, 181-182. John Dryden's prefatory poem to Dr. Walter Charleton book on Stonehenge, *Chorea gigantum* is characteristic: «The longest tyranny that ever sway'd / Was that wherein our ancestors betray'd / Their free-born reason to the Stagirite, / And made his torch their universal light» (W. Charleton, *Chorea Gigantum, or the Most famous Antiquity of Great-Britan, vulgarly called Ston-Heng, standing on Salisbury Plain, restored to the Danes*, London, [for] Henry Herringman, 1663). Galileo Galilei, on the other hand, in his *Dialogue concerning the two chief world systems, Ptolemaic and Copernican* (1632) argues that in the *studi umani* «in which neither true nor false exists, one might trust in subtlety of mind and readiness of tongue and in the greater experience of the writers», whereas «in the natural sciences, whose conclusions are true and necessary and have nothing to do with human will, one must take care not to place oneself in the defense of error; for here a thousand Demostheneses and a thousand Aristotles would be left in the lurch by every mediocre wit who happened to hit upon the truth for himself» (1967, 53-54).

[2] Steuart 1998 [1767], 1.II.viii, 224: «Relative profit, is what implies a loss to somebody, it marks a vibration of the balance of wealth between parties, but implies no addition to the general stock». See Marx 1962, ch. 1. Nevertheless, Steuart preserves the notion of equivalence in exchange. Chapters II and III of book II can be analyzed in the context of the passage of *NE*. We see an extension of 'want' to «demand» and the notion of reciprocity. For other affinities between Steuart and Aristotle see Urquhart 1991, and Karayiannis 1994, 55-56.

telian doctrine without morality. Only in the second half of the 18th century does the notion appear that both parties gain by trade.

The second remark concerns the focus on *utility* as a determinant of value. This focus partly originates from a merchant's interest in the factors that determine demand. This is particularly true for monopoly-protected international merchants for whom profit upon alienation has little relation to production costs. From an interest in demand, to the exploration of utility the step is an easy one (Screpanti and Zamagni 2004 [1989], 66). The concept of utility is not new. Utilitarian and hedonistic theories go a long way back, even before Aristotle (Drakopoulos 1990, 1991).[1] The Scholastics had used the concept to explain value, even though they had made a distinction between «good» utility (*virtuositas*) and the desirability of a thing, including the one derived from vanity (*complacibilitas*). Now, the utility of a thing is bereft of its moral undertones and we have a stronger emphasis on the Roman law categories of value (positive rather than natural law) and the disentanglement of value from the notion of common estimate and the *bonum commune*.

Nevertheless, utility does not become a central concept, nor is there an analytical advance. The authors of the period are more concerned with the increase in prices, which gives a greater importance to the discussion on money that must be related to a measure of value. The first quantity theories of money make their appearance together with the metallist literature (Schumpeter 1954, 300). The emphasis, however, is on policy making rather than analysis. We have *Policeywissenschaft* and *œconomie politique* as a total administration of the economy of the national state and less a scientific exploration of the theory of value.

I will illustrate the trajectory of the NE in two works of the early mercantilist period Bernardo Davanzati's *Lezione delle monete* and Antoine de Montchrestien's *Traicté de l'œconomie politique*.

Bernardo Davanzati

Bernardo Davanzati (1529-1606), Florentine merchant, classical scholar and translator of Tacitus, publishes in 1588 his *Lezione delle monete,*[2] a book characterized by Schumpeter (1954, 292) as «the all-time high»

[1] For example, Democritus wrote: «ὅρος συμφόρων καί ἀσυμφόρων τέρψις καί ἀτερπίη» («the boundary between what is to our interest and what is not, is pleasantness and unpleasantness») (Diels and Kranz 1952, vol. II, B Fragment 188, p. 183). See Drakopoulos 1991, ch. 2.

[2] Davanzati 1696 [1588]. Groenewegen 1987a notes that John Locke might have prompted Toland to undertake the translation. References to §§ are to the online English edition. References to pages to the Italian edition (Davanzati 1727 [1588]).

of metallist literature. Davanzati's subject-matter is money which is defined as «Gold, Silver, or Copper coin'd by publick Authority at pleasure, and by the Consent of Nations [*fatto dale genti*] made the Price and Measure of things, to contract them the more easily» (1696 [1588]. §9, 1727 [1588], 145] At §8 (144) he notes that in Latin money is called «*nummus* from the Greek word νόμισμα, which signifies a Statute, or somewhat appointed by Law, such as Money is, being made the Queen of all things». The reference is clearly to Aristotle's *Politics* and NE. Explaining his definition, he notes that «It was said in the Definition, By the Consent of Nations made the Price and measure of things, because men have agreed to fix that Value upon those Metals, for they have no such Privileges from Nature» another direct reference to NE (1133a29-31). Attempting to find the causes of the value of things he continues echoing the passage of Aurelius Augustinus:

§12. [...] A Natural Calf is far more noble than a Golden one, yet how much inferior in Price? An Egg that was bought for half a Grain of Gold, kept Count Ugolino alive in the Castle for ten days, which all the Treasure in the Universe could not do. What does more nearly concern our Lives than Corn? Nevertheless, ten thousand Grains thereof are sold for one of Gold.

(147)

He then poses the question

§13. But how comes it that things so valuable in themselves are worth so little Gold? From what root springs it, that one thing is worth just so much of another, rather than so much; [...]. All Men labour to become happy, and they think to find this Happiness in the Satisfaction of all their Wants and Desires, to answer which all Earthly Things were created very good. Now all these by the Consent of Nations are worth all the Gold (comprehending also the Silver and Copper) that is wrought in the World. All Men then do passionatley covet all the Gold, to buy all things for the Satisfaction of all their Wants and Desires, and so to become happy. The Parts follow the nature of the whole. How much therefore of the Happiness of a Man, City, or Country, is caus'd or occasion'd by any thing, just so much it is worth of their Gold or Labour: But it causes as much Happiness as it answers of their Desires or Wants, as Drink it pleasing proportionable to the degree of Thirst. The Will takes its measure from the Appetites and Pleasure; and Want takes its measure from the Nature, Season, Climate, and Place; from the excellency, rarity, or abundance of any thing, with perpetual Variation.

(147-148)

§14. To be always acquainted with the Rule and Arithmetical Proportion (*regola, e proporzione arimmetica*) which things bear among themselves and with Gold, it were necessary to look down from Heaven, or some exalted Prospect upon all the things that exist, or are done upon the Earth; or rather to count their Images reflected in the Heavens as in a true Mirror. Then we might cast up the Sum and say, there is on Earth just so much Gold, so many Things, so many Men, so many Desires: As many of those Desires as any thing can satisfy, so much it is worth of another thing, so much Gold it is worth.

(148)

In this passage, Davanzati takes as granted that all men passionately covet all the gold. Analytically, however, he is close to the Scholastics. Some of the factors that determine need are reminiscent of the scholastic *consideratio regionis, temporum dispositionis, hominum conditionis*.[1] The expression «Rule and Arithmetical Proportion» is Aristotelian. Another Aristotelian expression occurs when he notes that there is no fear Lucca may re-coin Florentine coins «since the Exchange has every way levell'd and made it equal» (§23). The basic axes of his analysis are *raritas* and *complacibilitas* developed by his compatriots Saints Bernardino and Antonino. He explains the scarcity of goods by examples from the classics and the Bible:

§15. Water is excellent, said Pindar[2] and we could not well live without it: But because every one may have enough of it for nothing. Jeremy had reason to lament that it could not be procur'd without Price. A Mole is a vile and despicable Animal, but in the Siege of Cassilino the Famine was so great, that one was sold for 200 Florins; and yet it was not dear, for he that parted with it dy'd of Hunger, and he that bought it out-liv'd the Siege.

(148)

The paradox of value finds here one of its first expressions. Davanzati, however, moves away from the scholastic-Aristotelian tradition by stating that there is no limit to wealth in the pursuit of happiness. Money serves as an intermediary between desires and goods and apportions value according to the degree of desire and scarcity. In this

[1] Langenstein in Roscher 1874, 19. *Cf.* Aquinas' *diversitas loci vel temporis, labor, raritas* cited in O'Brien 1920, 111.

[2] Divine Pindar is certainly innocent of the 'paradox of value'. In his *Olympia* (i.1) he begins with the phrase: «Water is best, and gold a blazing fire in the night» («ἄριστον μὲν ὕδωρ, ὁ δὲ χρυσὸς αἰθόμενον πῦρ»). The reference, however, *en passant* to the paradox of value is found in Plato («For it is the rare, Euthydemus, that is precious, while water is cheapest, though best, as Pindar1 said». «τὸ γὰρ σπάνιον, ὦ Εὐθύδημε, τίμιον, τὸ δὲ ὕδωρ εὐωνότατον, ἄριστον ὄν, ὡς ἔφη Πίνδαρος» (*Euthydemus*, 304b, J. Burnett, Oxford edition). *Cf.* Aristotle's, *Rhetoric*, 1364a24-31: «And that which is scarcer is a greater good than that which is abundant, as gold than iron, although it is less useful, but the possession of it is more valuable, since it is more difficult of acquisition. From another point of view, that which is abundant is to be preferred to that which is scarce, because the use of it is greater, for "often" exceeds "seldom,"; whence the saying: Water is best. And, speaking generally, that which is more difficult is preferable to that which is easier of attainment, for it is scarcer; but from another point of view that which is easier is preferable to that which is more difficult; for its nature is as we wish.» («καὶ τὸ σπανιώτερον τοῦ ἀφθόνου, οἷον χρυσὸς σιδήρου, ἀχρηστότερος ὤν: μεῖον γὰρ ἡ κτῆσις διὰ τὸ χαλεπωτέρα εἶναι. (ἄλλον δὲ τρόπον τὸ ἄφθονον τοῦ σπανίου, ὅτι ἡ χρῆσις ὑπερέχει: τὸ γὰρ πολλάκις τοῦ ὀλιγάκις ὑπερέχει, ὅθεν λέγεται ἀ΄ριστον μὲν ὕδωρ. καὶ ὅλως τὸ χαλεπω΄τερον τοῦ ῥᾴονος: σπανιω΄τερον γάρ. ἄλλον δὲ τρόπον τὸ ῥᾶον τοῦ χαλεπωτέρου: ἔχει γὰρ ὡς βουλόμεθα.») (transl. by J. H. Freese, Loeb edition). On the contrary, the expression ἄριστον μὲν ὕδωρ was used to denote that very often things in abundance are more useful than those that are dear, see, *e.g.*, Bacon 2002, 114. Plato's expression was well known and often quoted, *e.g.*, in Pufendorf, *De jure naturæ et gentium*, lib. v., cap. i., § 6, Cannan's edition of Smith's *Wealth of Nations*, (bk. i ch. iv n. 84) or Georgescu-Roegen 1973-1974. See Vivenza 2001.

dithyramb of money, the blood of the «Civil Body of the Commonwealth», the analysis of exchange disappears.

Davanzati's analysis is quite primitive and dominated by the primacy he ascribes to money. After him, we have a streak of treatises written more by merchants and policy advisors to princes (or candidates for that position) rather than theorists. Although in the 17th century we have references to the subjectivity of value (*e.g.*, Barbon 1690, Law 1705), no attempt is being made to connect this subjectivity with a quantitative expression of the value of goods.

Antoine de Montchrestien

Our second example comes from the *Traicté de l'œconomie politique* of Antoine de Montchrestien (1575-1621), adventurer, entrepreneur and playwright, published in 1615. His reputation as a minor poet in the History of Economic Thought derives mainly from the fact that he was the first to re-introduce the term «political economy».[1] The work, dedicated to the Queen mother, aims at convincing the crown to adopt mercantilist policies and central management of the economy and to give primacy to the merchants, who must be given appropriate incentives and their profits protected. Montchrestien does not concern himself with the problem of value. His reference to Aristotle appears almost as an attempt to display erudition. It is interesting, however, that the first work that bears «political economy» in its title is not free from the influence of the Stagirite. And this influence is clear. Montchrestien adopts Aristotle's notion that «need» and «reciprocal equality» is what brings cities together. In his text, however, he jumbles Plato and Aristotle, and writes:

> These two great lights of Philosophy, Plato and Aristotle, and then their most famous disciples, who explicitly or indirectly, concerned themselves with Politics, thought that common need requiring common help [*l'indigence commune ayant besoin d'un secours commun*], has created from the beginning the aggregation and union of people, whence it came the union of cities and the habitation of towns [*la communion des citez et l'habitation des villes*].
>
> (1999 [1615], 48)

Their mistake was, however, that – not being Christians – they believed in nature and in the natural inequality of people instead of divine providence, which determines everyone's position in society. Neither did the ancient philosophers concerned themselves with the writing of «appropriate regulations and measures in order to create

[1] Montchrestien 1999 [1615]. Antoyne de Montchrétien is an alternative spelling. The first use of the term «political economy» by Montchrestien has been challenged. See Groenewegen 1987b and Bridel 1987.

classes, arts and professions with a definite number of people according to the ability, availability, utility and necessity of each country» (1999 [1615], 49). In other words, their political theory was not useful for a mercantilist manpower planning. These great men are justified, however, because they were bound by an erroneous belief, *viz.*, that «the common need determines the basis of arts, by guiding and determining them itself, and that this would prove sufficient [*y suppléroit suffisamment*]» (1999 [1615], 50). Moreover, they believed that in every civilized society a sufficient number of people would come forward to exercise these arts without political provision [*prévoyance politique*]. Thus, in Montchrestien we find the ghosts of concepts that exist in Aristotle's *Politics* and especially in *NE*.[1] He uses them, however, in order to fight the idea that a state can function without a directed economic policy. He almost accuses them of adopting *laissez-faire* policies. In fact, he is annoyed that their analysis concerns democracies and he substitutes economic analysis with a voluntarist mercantilism.

Natural Philosophers: Grotius, Pufendorf, Hutcheson

Our third stop in the trajectory of *NE* is natural law philosophy. In legal theory, the analysis of value is done mainly through the reference to the value of goods that are the object of a contract. The importance of natural law philosophy lies in the fact that the theory of value as it appeared in classical political economy is strongly influenced by the way the problem was set by natural law philosophy. The natural law philosophers attempt to find a *measure of value*. It was not their main objective, but from Grotius to Pufendorf there is a clear line through Carmichael and Hutcheson to Adam Smith. It is only the latter who eventually made an analytical breakthrough. But this was done in terms set by his predecessors. In the analysis of the value of goods that are the object of a contract the passage from *NE* has played an important role.

We start our analysis from Hugo Grotius' (1583-1645) seminal work *On the Law of War and Peace*.[2] This work, published in 1625, was the first treatise on international law. Grotius mentions *NE* in his first book

[1] *Politics* (1261a30-31): «Hence reciprocal equality is the preservative of states» and *NE* 1133b20 («but with reference to need they may become so sufficiently»).

[2] *Hugonis Grotii de iure belli ac pacis libris tres in quibus ius naturae & gentium, item iuris publici præcipua explicantur*, Paris: Nicolas Buon, 1625. I have also consulted the 1680 Latin edition, with Gronovius' comments (Hague, Arnold Leers) and the French editions, edited and translated with comments by Jean Barbeyrac, *Le droit de la guerre et de la paix*, Amsterdam: Pierre Coup, 1724 and Leiden: Aux Dépens de la Compagnie, 1759. References are to book, chapter, and section (§).

(I.I.§8), where he discusses justice and comments upon and adopts Aristotle's distinction between commutative or corrective justice (*justitia expletrix*) and distributive justice (*justitia attributrix*).[1]

In his second book, on contracts he writes:

> The most natural measure of the price of any thing is the need (*indigentia*) we have for it, as Aristotle has clearly demonstrated. This is certainly the case among barbarian nations (*barbaros populos*). But it is not the only measure (*vnica mensura*). Because the will (*voluntas*) of people, which is the mistress of all, desires and seeks things, that are not necessary. It is luxury, remarks Pliny, that makes the price of the pearls. On the contrary, the most necessary things are cheaper because of their abundance (*propter copiam*). This Seneca shows with many examples, in *De Beneficiis* (vi chap. 15) and adds that "the price of things changes with time. Praise them, as much as you like, they cannot be worth more than they can bring". And the Jurisconsult Paulus notes that "the price of things is not determined by the effect or the utility it has in single cases, but by common estimation" [*Pretia rerum non ex effectu nec utilitatem singulorum, sed communiter funguntur*]. Hence, it is that things are estimated in proportion to what is usually offered or given for them, a rule admitting of great latitude, inside which one can offer or give less, except in certain cases, where the law has fixed a standard price, ἐν στιγμῇ, as Aristotle said. In the determination of the common price we usually take into account the labour and the expenses undertaken by the merchants (*In communi autem illo pretio ratio haberi solet laborum & expensarum quas mercatores faciunt*). And we also take into account sudden changes owing to the abundance or dearth of buyers, money and goods (*ex copia & inopia ementium, pecuniæ, mercium*). There are also accidental cases, where we can sell a thing below or above the common price, and which can be estimated, such as a consequent loss, a foregone profit or a particular affection for a thing.
>
> (II.xii §14)

Here Grotius definitely misinterprets Aristotle by understanding *chreia* (need) as something that concerns only barbaric nations, an interpretation that would have made the Stagirite to turn in his grave. Even though references to the Scholastics are absent from his work, his analysis of price is a common estimation labour and expenses theory to which he adds the effects of the market.[2] He starts with Aristotle and ends up with a «commonsense» approach to the value of things.

Much more Aristotelian and analytic is Samuel von Pufendorf (1632-

[1] As Barbeyrac correctly comments, Grotius mistranslates the Greek word «συνάλλαγμα», as «contract» and calls this kind of justice only «corrective». συνάλλαγμα, however, has a wider meaning in Aristotle. This distinction between *justitia expletrix* and *attributrix* is also used by Adam Smith, in reference to Grotius (*The Theory of Moral Sentiments*, 1759, VII.ii.14). The translator of the English edition (*The rights of war and peace*, London, B. Boothroyd, 1814) A. C. Campbell omits the passage noting: «The eighth Section is omitted, the greater part of it consisting of verbal criticism upon Aristotle's notions of geometrical and arithmetical justice; a discussion no way conducive to that clearness and simplicity, so necessary to every didactic treatise».

[2] As a Protestant, Grotius does not cite Catholic Saints. His references, however, are suspiciously close to those of Aquinas (particularly *ST*, II^{a}-II^{æ}, q. 77).

1694). His *magnum opus*, *De jure naturae et gentium*,[1] was published in 1672 and it was followed in the next year by the extremely popular résumé of the same work entitled *De officio hominis et civis juxta legem naturalem*.[2] In these books, we find a chapter *De pretio*.[3] In *De jure,* Pufendorf (bk. v, ch. i) starts with the remark that in order to have an exchange

> It becomes necessary for men to attach, by a certain convention, to things that enter into commerce, a certain concept [*aliquam affectionem*,[4] *une certaine idée*], through which they can compare them and render them to a just equality. Nothing is, however, compared or equalized but through the medium of a certain *quantity* [*ratione quantitatum*],[5] equality being nothing more than the relationship of the same *quantity*. We come now to consider the quantity of things and actions, as far as they are useful in human life. Hence, we must examine the foundation and the common measure of this magnitude.

This is clearly the Aristotelian notion of commensurability, as a prerequisite of equality and exchange.[6] He argues that the magnitude used for this comparison is of a different kind, a particular quantity, not physical or mathematical, which allows things to be estimated and compared, along a moral relation and that therefore it should be a *moral quantity*.[7] This moral quantity of things and actions to the extent that they are useful in life and that makes them

[1] *Samuelis Pufendorfii De jure naturae et gentium libri octo*, Adam Junghans, Londini Scanorum (Lund), 1672. I have used the 1688 Latin edition (Amsterdam, Andreas ab Hoogenhuysen) (references are to the French edition translated with comments by J. Barbeyrac, *Le droit de la nature et des gens*, Basel, E. & J. R. Thourneisen, 1732. I have also consulted the English edition, *Of the laws of nature and nations*, Oxford, Lichfield, 1703).

[2] *De officio hominis et civis juxta legem naturalem libri duo*, Lund, Junghans, 1673. English edition *On the Duty of Man and Citizen According to Natural Law*, transl. by M. Silverthorne and ed. by J. Tully, Cambridge, Cambridge, University Press, 1991.

[3] The *De pretio* chapters are v.i in *De jure* and i.xiv in *De officio*. *Pretium*, of course, is «price», but it commonly, and correctly, rendered into English as «value».

[4] *Affectio* has clearly Ciceronian – Aristotelian undertones (M. T. Cicero, *Topica*, 18.68).

[5] Barbeyrac elaborates as «quelque *Quantité* ou quelque étendue», «étendue» being defined in the 4th edition of the *Dictionnaire de L'Académie française* (1762) as «Dimension d'une chose en longueur, largeur & profondeur. En ce sens il n'a guère d'usage que dans le didactique. Selon quelques Philosophes, l'étendue est l'essence de la matière. L'étendue appartient au corps, & la pensée à l'esprit».

[6] Compare *NE*, 1133a18-19: «In that case they have to be equalized. Hence all commodities exchanged must be able to be compared in some way» («διὸ πάντα συμβλητὰ δεῖ πως εἶναι, ὧν ἐστὶν ἀλλαγή») with Pufendorf's Latin text «*secundum quam res disparis naturæ invicem comparari atque exæquari possent*».

[7] «Or les choses étant susceptibles d'estimation non seulement par rapport à leur substance Physique, mais encore à l'égard de quelque Rélation Morale; il s'ensuit qu'outre la *Quantité Physique*, & la *Quantité Mathématique*, il y a encore une *Quantité Morale*, selon laquelle on estime & l'on mesure les choses moralement». He defines the nature of this moral quantity at the beginning of his work (bk. i, ch. i, § xxii) where he speaks of «Modes d' estimation, ou des Quantitez Morales» which derive «de l' institution & la détermination d'une Faculté Raisonnable». This moral quantity encompasses things, actions and persons. In the latter case, we have to do with esteem (*valor*).

'morally' comparable in order to enter exchange, is called price (*pretium*).[1]

He distinguishes between «common» (*pretium vulgare*) and «eminent» (*eminens*) price.[2] «The first is placed on things and actions that enter commerce, according to their capability of serving our needs, comforts and pleasures».[3] Eminent price is that «attached to money, containing virtually the value of all kinds of things and actions, and which serves as the common measure and standard to compare and adjust the infinite variety of the degrees of estimation that are capable of».[4] Thus, the distinction is between (subjective) value and price. Now, the foundation of price is «the ability of things and actions to serve, directly or indirectly, the needs, comforts and pleasures of life».

He then turns to Grotius[5] as arguing that the most natural measure of the price (value) of things is need (*indigentia*). He refutes him by stating that this is not generally true, since by need we commonly mean necessity, whereas we can have price in cases of luxury or pleasure. This criticism is unfounded, since Grotius makes the same point himself. Actually, both he and Grotius misinterpret Aristotle because the latter never suggested that *chreia* (need) concerns necessary goods. Thus, the passages of Grotius and Pufendorf that distinguish between need and luxury are unnecessary elaborations on Aristotle's argument.

Pufendorf then notes that Grotius uses the passage of Aristotle inappropriately, since

> this need, which serves as the common rule and measure, is not the only foundation of price, but only of exchange, or commerce [*permutationis sive commerciorum*],[6] because if nobody needed anything, or if he did not need things they belonged to

[1] Il ne s'agit donc ici proprement de la Quantité Morale des Choses & des Actions, qu'entant qu'elles sont de quelque usage dans la Vie, & qu'on les compare ensemble pour les rendre propres à entrer dans le Commerce. C'est ce que l'on appelle *Prix* ou *valeur*. De sorte que le PRIX en général est *une Quantité Morale, ou une certaine valeur des Choses & des Actions qui entrent en commerce, selon laquelle on les compare les unes avec les autres*.

[2] In English, «*vulgare*» and «*eminens*» are usually translated as «common» and «eminent» (*On the Duty*, 1991, 93), even though the term «vulgar» is used in the Lichfield, Oxford edition (1703). In French Barbeyrac translates «*Prix propre ou intrinsèque*» and «*Prix virtuel ou éminent*».

[3] Le prémier, c'est celui que l'on conçoit dans les *Choses* mêmes ou dans les *Actions* qui entrent en commerce, selon qu'elles sont capables de servir à nos besoins, ou à nos commoditez & à nos plaisirs.

[4] L'autre, c'est celui qui est attaché à la *Monnoie*, & à tout ce qui tient lieu de Monnoie, entant qu'elle renferme virtuellement la valeur de toutes ces sortes de Choses & d'Actions, & qu'elle sert de régle commune pour comparer & ajuster ensemble la variété infinie des degrez d'estimation dont elles sont susceptibles.

[5] He refers to the passage cited above (*lib*. II., *cap*. XII. §14. *num*. 1).

[6] «Bartering» in the English (1703) edition.

someone else, but only their own, they would keep and enjoy them, without seeking to acquire those of others, as the Philosopher explicitly stated.[1 2]

Pufendorf starts as Aristotle with the need to find a common measure of things. Even though he defines a moral quantity and extends clearly the notion of *chreia* (need) to «the capability of serving our needs, comforts and pleasures», he does not solve Aristotle's problem. First, he wants to extend the concept of value (common price) even to things that are not exchanged. Second, he simply asserts the existence of this moral dimension, so that his common measure assumes a tautological quality. When, later on, he tries to explain the determinants of price he falls back to the standard explanations of the Scholastics and Grotius, documented, admittedly, with impressive erudition, mentioning scarcity, market circumstances and eventually labour and expenses.

The Scottish Enlightenment

Pufendorf has greatly influenced Gershom Carmichael (*c.* 1672-1729), the founder of the Scottish philosophical school and first Professor of Moral Philosophy at the University of Glasgow. Carmichael edited Pufendorf's *De officio* with his own commentaries. This work, in turn, has provided the foundation of Francis Hutcheson's (1694-1746) philosophy, who succeeded him at the Chair of Moral Philosophy.[3] Hutcheson published in 1742 his *Philosophiae moralis institutio compendiaria*, translated in 1747 as *A Short Introduction to Moral Philosophy*. In 1755, *A System of Moral Philosophy* was published posthumously.[4]

[1] Car ce *besoin, qui sert de régle & de mesure commune*, n'est pas l'unique fondement du Prix, mais seulement des Echanges, ou du Commerce; puis que, si personne n'avoit besoin de rien, ou si l'on n'avoit pas plus besoin des choses qui appartiennent à autrui, que des siennes propres, on garderoit celles-ci, & l'on en jouïroit, sans chercher à aquérir aucune des autres, comme ce Philosophe s'en explique formellement.

[2] This is clearly the text *NE*, 1133a27-28: «since if men cease to have wants or if their wants alter, exchange will go on no longer, or will be on different lines» («εἰ γὰρ μηθὲν δέοιντο ἢ μὴ ὁμοίως, ἢ οὐκ ἔσται ἀλλαγὴ ἢ οὐχ ἡ αὐτή»). He then cites in Greek and in Latin translation the passage *NE*, 1133b13-14: «That it is need which, by serving as a single standard, holds such an association together, is shown by the fact that, when there is no need for mutual service on the part of both or at least of one of the parties, no exchange takes place between them» («ὅτι δ' ἡ χρεία συνέχει ὥσπερ ἕν τι ὄν, δηλοῖ ὅτι ὅταν μὴ ἐν χρείᾳ ὦσιν ἀλλήλων, ἢ ἀμφότεροι ἢ ἅτερος, οὐκ ἀλλάττονται») (1688, 458-459).

[3] Carmichael's 1724 edition of *De officio* is *De Officio hominis et civis ... supplementis et observationibus ... auxit ... Gerschomus Carmichael*, Edinburgi. There is an anthology of his writings ed. by J. Moore and M. Silverthorne (Carmichael 2002). On Carmichael see Naldi 1993 and Skinner 1995.

[4] Francis Hutcheson, *Philosophiae moralis institutio compendiaria, ethices et jurisprudentiae naturalis elementa continens*, Robert Foulis, Glasguae [Glasgow], 1742; Idem, *A Short Introduction to Moral Philosophy: In Three Books, Containing The Elements of Ethicks and the Law of Nature*, 2nd edn., Glasgow, Robert and Andrew Foulis, 1753. Idem, *A System of Moral Philosophy in Three Books*, Glasgow, Robert and Andrew Foulis, 1755.

Hutcheson notes in the preface to his students in the *Short Introduction* (1753, v) that he has based his work on Cicero and Aristotle, and on Carmichael's edition of Pufendorf's *De officio*, for which he thinks that the notes are more important than the text itself. Hutcheson is Aristotelian in the use of the term «economics» («Oeconomicks treat of the rights and obligations in a family», 1753, iii.1, 243).[1] He divides «Oeconomicks» into three categories, «concerning marriage», «the duties of parents and children» and «of masters and servants» following closely Aristotle's *Politics* (1753, 235).[2] In Hutcheson there is also a chapter on value, but things are more clear than Pufendorf with much less clutter. The value of things is attributed to their ability to be useful or give pleasure in life, and depends, on the one hand, on the demand for them, and, on the other, on the *difficulty* to acquire them.[3] In the *Philosophiae moralis institutio compendiaria* (1742), «demand» appears as «*indigentia*», which is the typical translation of *chreia* (need).[4] Demand is proportional to the number of those who want the goods and their need for them. Difficulty of acquisition depends on whether the number of goods is small (*materiae penuria*), on the toil (*acquirendi labore*) and the ingenuity required for their production, as well as on the standard of living of the producers dictated by the customs of the country. Thus, in Hutcheson, we still have the notion of labour – quantitative, qualitative and social – combined with scarcity.

Adam Smith

Hutcheson's successor to the Chair of Moral Philosophy was Adam Smith. Indeed, Smith's first lectures were partly based on those of Hutcheson. Nevertheless, even from his *Lectures on Jurisprudence* [LJ Smith 1978] of 1763, Smith had already transcended the line of rea-

[1] In the Latin text (1742), the term appears as «ars *Oeconomica*».

[2] (*Pol.* 1253b5-10) «the primary and smallest parts of the household are master and slave, husband and wife, father and children; we ought therefore to examine the proper constitution and character of each of these three relationships, I mean that of mastership, that of marriage1 (there is no exact term denoting the relation uniting wife and husband), and thirdly the progenitive relationship (this too has not been designated by a special name).» – «πρῶτα δὲ καὶ ἐλάχιστα μέρη οἰκίας δεσπότης καὶ δοῦλος, καὶ πόσις καὶ ἄλοχος, καὶ πατὴρ καὶ τέκνα, περὶ τριῶν ἂν τούτων σκεπτέον εἴη τί ἕκαστον καὶ ποῖον δεῖ εἶναι. ταῦτα δ' ἐστὶ δεσποτικὴ καὶ γαμική (ἀνώνυμον γὰρ ἡ γυναικὸς καὶ ἀνδρὸς σύζευξις) καὶ τρίτον τεκνοποιητική (καὶ γὰρ αὕτη οὐκ ὠνόμασται ἰδίῳ ὀνόματι)» – the threefold division was also present in Pufendorf, but the term «economics» is absent. See also Cannan 1929, 38.

[3] Hutcheson 1753, II.xii, 199.

[4] Note that this change of 'need' to «demand» appears with greater subtlety in James Steuart: «Demand, considered as a term appropriated to trade, will now be used instead of wants; the term used in the first book relatively to bartering; we must therefore expect, that the operations of the same principle, under different appellations, will constantly appear similar, in every application we can make of it to different circumstances» (1998 [1767], 1.II ii, 193).

soning concerning the problem of value that can be traced from the Scholastics to his teacher. Was Smith influenced by Aristotle's NE, v formulation of the problem of value?

Smith is certainly familiar with the Philosopher's work (Bonar 1932 [1894], 10-12; Vivenza 2001; Griswold 1999). He makes an explicit reference to NE, in part VII of *The Theory of Moral Sentiments* [TMS Smith 1976 (1759)] in the chapter entitled «Of those Systems which make Virtue consist in Propriety» where he discusses the notion of justice and mediocrity.[1] In particular, he mentions justice in «the sense of the word [which] coincides with what Aristotle and the Schoolmen call commutative justice, and with what Grotius calls the *justitia expletrix*» (TMS VII.ii.1.10). He also distinguishes his sense of «distributive justice» from that of Aristotle in NE, v [1130b31-32], by mentioning in a footnote that for the philosopher distributive justice «consists in the proper distribution of rewards from the public stock of a community» (*ibidem*). He relies, however, more on Grotius than Aristotle.

In his economic analysis, however, references to Aristotle are encyclopaedic, not analytical. He does not set up the problem of value in a manner that would provide an answer to Aristotle's search for a common measure based on need. Why is that? Smith, firstly, makes a break with his teacher by distinguishing between natural and market price (LJ, vi.67).[2]

The circumstances that regulate market price are «1st, the demand or need for it (whether this be real or capricious); 2^{dly}, the abundance of it in proportion to this demand; and 3^{dly}, the wealth of the demand or demanders» (LJ, vi.70). Natural price, on the other hand, «is that which is necessary <?to induce> one to apply to a particular business» (LJ, vi.67). Hutcheson's «difficulty of acquisition» and «need or demand» are still there, but now they affect only the *market* price of goods. Note that Smith writes «need or demand», not simply «demand», in reference to the notion of «*indigentia*» or «*chreia*». Moreover, he does not adopt the misinterpretation of Aristotle by Grotius and Pufendorf, distinguishing between «need» and «luxury». «Need» may be «real or capricious». In the *Wealth of Nations* (I.iv) Smith also abandons the notion of utility as a determinant of value, even though the concept has given one of the most beautiful passages in the TMS.[3]

[1] TMS, VII.ii.1. On mediocrity (μεσότης) in relation to virtue, see TMS, VII.ii.1.13.

[2] This division was already present in CANTILLON 1755, I.X *valeur intrinsèque* and *prix du Marché*, and in TURGOT 1844 [1767], 431, *valeur fondamentale et valeur vénale*. Similar is STEUART's 1998 [1767], 1.II.iv, 202 distinction between «the real value of the commodity, and the profit upon alienation». See KARAYIANNIS 1991.

[3] Part IV of TMS is entitled «Of the Effect of Utility upon the Sentiment of Approbation».

Thus, a measure of value based on «need» is inappropriate for «exchangeable value».

Are there any Aristotelian features in Smith analysis? I believe there are, even though no direct influences can be shown convincingly to exist. There are: firstly, the distinction between «value in use» and «value in exchange» which refers to the «dual use» of goods in Aristotle's *Politics*.[1] Secondly, there is Smith's search for a measure of «exchangeable value» which allows the equivalence of exchange to be retained, even though both parties can profit from the exchange.[2] Looking in labour for such a measure is not far from explanations of the «*labore et expensis*» (Aquinas, *Sent. Ethic.*, v.ix.iii) type advanced in interpretations of NE v. Thirdly, in Smith we find the notion that «[s]ociety may subsist among different men, as among different merchants, from a sense of its utility, without any mutual love or affection; […] it may still be upheld by a mercenary exchange of good offices according to an agreed valuation» (TMS, ii.ii.3.2, *cf.* WN, i.ii.2). This, I believe is similar to the Aristotelian notions of «need» and «reciprocity» [NE, 1132b31-32]. Fourthly, when Smith (WN, i.v.4) discusses how different types of labour that require different «hardship» and «ingenuity» are reduced to each other, he writes:

> In exchanging indeed the different productions of different sorts of labour for one another, some allowance is commonly made for both. It is adjusted, however, not by any accurate measure, but by the higgling and bargaining of the market, according to that sort of rough equality which, though not exact, is sufficient for carrying on the business of common life.

This last sentence is similar to the NE, 1133b13-15 passage «Now in truth, it is impossible that things differing so much should become commensurate, but with reference to need they may become so sufficiently». Indeed, one century later, Sir Alexander Grant (1874, vol. 2, 120, fn. 12) commenting on this passage of NE, even though he does not make the connection to Adam Smith's passage, translates *chreia* (need) as «'demand' or the higgling of the market».

[1] «with every article of property there is a double way of using it; both uses are related to the article itself, but not related to it in the same manner – one is peculiar to the thing and the other is not peculiar to it. Take for example a shoe – there is its wear as a shoe and there is its use as an article of exchange» («ἑκάστου γὰρ κτήματος διττὴ ἡ χρῆσίς ἐστιν, ἀμφότεραι δὲ καθ' αὑτὸ μὲν ἀλλ' οὐχ ὁμοίως καθ' αὑτό, ἀλλ' ἡ μὲν οἰκεία ἡ δ' οὐκ οἰκεία τοῦ πράγματος, οἷον ὑποδήματος ἥ τε ὑπόδεσις καὶ ἡ μεταβλητική»). (*Pol.* 1257a6-9). See Ritchie 1923 [1896]. Equally Aristotelian (NE, 1133b21-26) is Smith's analysis [WN, i.v.5-6] for the reasons of using currency.

[2] «A free commerce on a fair consideration must appear to be advantageous on both sides. ...For the very cause of the exchange must be that you need my goods more than I need them, and that I need yours more than you do yourself» (LJ, vi.160).

NE AND THE BIRTH OF POLITICAL ECONOMY

Before Adam Smith two great scholars have attempted to create a theory of value focusing on the subjective relation of goods to persons. Both make use of the framework set by Aristotle. There are Ferdinando Galiani and Anne-Robert-Jacques Turgot.

FERDINANDO GALIANI

Ferdinando Galiani (1728-1787), is a major figure of the Neapolitan Enlightenment. At the age of 22, he writes *Della Moneta*.[1] Galiani refers explicitly to NE v.[2] In the second chapter of the first book of *Della Moneta* he cites NE 1133a29-31 in Greek and in Latin and he makes a reference to *Politics*. He uses, however, the NE passage to accuse Aristotle, the Aristotelian theologians and jurisconsults, Davanzati, Locke and others of that they think that only money has value. On the contrary, he writes «not only the metals comprising money, but every thing on earth, without exception, has its own natural value, derived from certain, general and constant principles. And neither whim, nor law, nor the prince, nor anything else can violate these principles and their effects» (1803 [1750], 57; *cf.* 1977 [1750], 21).

The value of things depends upon the esteem (*stima*) people have for them.

> One might say that esteem, or value, *is an idea of proportion between the possession of one thing and that of another in the concept of a man*. [Original emphasis]. When we say that ten bushels of grain are worth as much as a cask of wine, we express a proportion of equality between having one or the other; therefore men, always very cautious not to be defrauded of their own pleasures, exchange one thing with another; because in equality, nothing is lost or gained.
>
> (1803 [1750], 58; *cf.* 1977 [1750], 21)

The equality of exchange is maintained in Galiani, but it is transferred from the transaction between two persons, to the mind of one. It becomes internalized and subjective. Galiani still keeps the Scholastic concepts of *complacibilitas* [which he calls *utilità*] and *raritas*.

He goes on:

> Value, then, is a ratio [*ragione*], and this ratio is composed of two ratios, the names

[1] GALIANI, 1750, 1803 [1750], 1977 [1750]. On Galiani see EINAUDI 1952 [1945], CESARANO 1987, and the special issue of this Journal (vol. 9, no. 3, 2001). Friedrich Nietzsche (1886, 2.26) writes on Galiani: «Es giebt sogar Fälle, wo zum Ekel sich die Bezauberung mischt: da nämlich, wo an einen solchen indiskreten Bock und Affen, durch eine Laune der Natur, das Genie gebunden ist, wie bei dem Abbé Galiani, dem tiefsten, scharfsichtigsten und vielleicht auch schmutzigsten Menschen seines Jahrhunderts – er war viel tiefer als Voltaire und folglich auch ein gut Theil schweigsamer».

[2] «Aristotele, uomo per altro d'ingegno grandissimo e meraviglioso, nel lib. 5 de' Costumi al c. 7» (1803 [1750], 55).

thereof I express with *utility* [*utilità*] and *scarcity* [*rarità*]. […] It is obvious that the air and the water, which are elements extremely useful for human life, have no value whatsoever, because they lack scarcity. On the contrary, a small bag of sand from the shores of Japan, would be a rare thing, but since it has no particular utility, it would have no value.

(1803 [1750], 59; *cf.* 1977 [1750], 21)

Galiani is much more analytical than Davanzati, whom he accuses that he could not solve the paradox of value. He further elaborates the concepts of utility and scarcity. «Utility is the ability of a thing to procure happiness [*felicità*].» (1803 [1750], 59). He considers utility necessary for the explanation of value. We must find a measure of utility, because if there are no certain principles on which utility depends, we cannot find the price of things, nor can we have an economic science. In a sense, he is troubled by the Aristotelian problem, that we must measure *chreia* (need). Scarcity is defined as «the proportion between the quantity of a thing and the use that is being made thereof». This quantity is determined in two ways. Firstly, according to the abundance in which things are found on earth (animals, fruits, minerals). Secondly, according to the labour or trouble (*fatica*) involved. This, in turn, depends upon the number of workers, the time and the quality of labour. Thus, he introduces again the notion of labour to the value of goods.[1]

Galiani makes a true effort to determine the value of things. In his work, we can find remarks about long-run equilibrium, the influences of the demand for labour, of human capital, of the determination of labour time and of wage differentials. Ultimately, however, he stands between a demand-determined subjective theory and a labour theory of value.

Anne-Robert-Jacques Turgot

Galiani's exposition forms the basis of Turgot's analysis of value. Anne-Robert-Jacques Turgot (1727-1781) is perhaps the most important French economist of the 18th century. He forms the bridge between the Physiocrats and classical political economy (Groenewegen 1987c, 709). A polymath, with a knowledge of classical and modern languages, Turgot makes important contributions to linguistics, philosophy of history and to what is now called sociology. He served as *contrôleur général* for Louis XVI between 1774 and 1776. His main work

[1] Schumpeter 1954, while praising Galiani, thinks that his labour theory destroys his subjective theory of value. He, therefore, classifies him as a precursor of the labour theory of value. Giocoli 1999, on the other hand, maintains that *fatica* expresses a subjective theory of value.

on economics is the *Réflexions sur la formation & la distribution des richesses* written in 1766.[1]

Even though Turgot does not mention Aristotle explicitly, his analysis is strongly reminiscent of the text of *NE*.[2] Turgot adopts the Physiocratic view that the husbandman (*laboureur*) in the original division of labour holds a primacy which is not due to social hierarchy [*une primauté d'honneur ou de dignité*] but to a physical necessity (*nécessité physique*, his emphasis).

The husbandman can, generally speaking, subsist without the labour of other workmen; but no other workmen can labour, if the husbandman does not provide him wherewith to exist. It is this circulation, which, by a reciprocal exchange of wants, *renders mankind necessary to each other, and which forms the bond of society* [*par l'échange réciproque des besoins, rend les hommes nécessaires les uns aux autres & forme le lien de la société*, my emphasis]: it is therefore the labour of the husbandman which gives the first movement. What his industry causes the earth to produce beyond his personal wants, is the only fund for the wages, which all the other members of society receive in recompence for their toil. The latter, by availing themselves of the produce of this exchange, to purchase in their turn the commodities of the husbandman, only return to him precisely what they have received.

(1769-1770, 21-22, ch. 5)

The Aristotelian concept of *antipeponthos* (reciprocity), of *chreia* (need) and of the notion that «τὸ ἀντιπεπονθὸς σῴζει τὰς πόλεις» (cities are based on reciprocity) are evident in this passage. All other workers, however, owing to competition receive subsistence wages, while the husbandman who «does not bargain with nature» receives a better reward. With the progress of society and the concomitant inequality in land ownership, the landowner can hire farm workers who now receive subsistence wages. For Turgot, exchange between persons does not add value. Exchange is described in his analysis of commerce (chs 31-38, pp. 32-44).

Reciprocal wants first introduced exchanges of what we possessed, for what we stood in need of one species of provision was bartered for another, or for labour. In exchanging, it is necessary that each party is convinced of the quality and quantity of every thing exchanged. In this agreement it is natural that every one should desire to receive as much as he can, and to give as little; and both being equally masters of what they have to barter, it is in a man's own breast to balance the attachment he has to the thing he gives, with the desire he feels to possess that which he is willing

[1] *Réflexions sur la formation & la distribution des richesses, par Mr. X*. The work was written in 1766 and published anonymously in the *Ephémérides du citoyen* in three parts. The quotations and the pagination are from the online edition of the original *Ephémérides* articles available from Paulette Taieb's website. The first English translation of 1793 («Anne Robert Jacques Turgot, *Reflections on the Formation and Distribution of Wealth*, London, J. Good, 1793») is available online from the Library of Economic and Liberty.

[2] London, see Soudek 1952, 72. Rodolphe Dos Santos Ferreira 2002, 577 observes that «Even if Turgot does not refer to Aristotle, [...] his writings sometimes appear almost as a gloss of the relevant passages of the *Nicomachean Ethics*».

to receive, and consequently to fix the quantity of each of the exchanged things. If the two persons do not agree, they must relax a little on one side or the other, either by offering more or being content with less.

(32-33)

There is still reciprocal need. Everybody exchanges goods and labour according to how much he values his commodity and that of the other. There is a bargain, in which each party tries to gain as much as he can, and then an exchange ratio is established. This exchange ratio is different among different pairs of traders. One bushel of wheat (*un boisseau de bled*) can be exchanged for four, six or eight pints of wine. Neither ratio, however, constitutes the true price of a bushel of wheat. «In a word, so long as we consider each exchange independent of any other, the value of each thing exchanged has no other measure than the wants or desires of one party weighed with those of the other, and is fixed only by their agreement» (34-35).

The analysis now proceeds to a market economy, with many agents willing to trade wheat with wine. Exchange is no longer bilateral and the sellers of wheat compete among themselves, as they do the sellers of wine:

The value of the wine and corn is not fixed by the two proprietors with respect to their own wants and reciprocal abilities [*à leurs besoins & à leurs facultés réciproques*], but by a general balance of the wants of all the sellers of corn, with those of all the sellers of wine. For those who will willingly give eight pints of wine for a bushel of corn, will give but four when they shall know that a proprietor of corn is willing to give two bushels for eight pints. The medium price [*prix mitoyen*] between the different offers and the different demands, will become the current price to which all the buyers and sellers will conform in their exchanges; and it will be true if we say, that six pints of wine will be to every one the equivalent for a bushel of corn, that is, the medium price, until a diminution of supply on one side, or of demand on the other, causes a variation [of this evaluation].

(36)

Starting from the Aristotelian expression, we have now a special interpretation. Need brings people together, but it balances at a market level their needs with their abilities. The diametrical conjunction is unified in the market that balances the individual conjunctions into a single price of goods. The exchange ratio starts from the individual need, but it is determined in a competitive market. Turgot offers an analytical mechanism through which price is determined, instead of an indeterminate *communis aestimatio*. He is closer to Jevons and Edgeworth (1881, 29-31) than to the Scholastics.

He maintains his relation to Aristotle in the analysis of a common measure, when he declares that every good can function as a common measure by comparing its price to that of others. Some goods, however, such as gold or silver, have qualities that make them more appropriate to serve as money (ch. 42). We find here Schumpeter's (1954, 63) observation that Aristotle's theory of money has been used until the 19th century.[1]

Turgot, however, did not answer the question of how price is determined. In the Physiocratic doctrine, «commerce is but an exchange of value for equal value, and in relation to these values the contracting parties have neither gain, nor loss».[2] While both parties profit from an exchange, in terms of value the exchange is equivalent. Turgot attempts to answer this question in a posthumously published essay entitled *Valeurs et Monnaies* written somewhere between 1767 and 1770.[3]

In this essay, he begins his analysis of value from the isolated individual («homme isolé») without contact with the rest of humanity. Three considerations enter the determination of value in this case. The individual, at first, compares his needs among them and ranks them according to an order of necessity and utility («à l'ordre de nécessité et d'utilité» (Turgot 1919 [1769], 85). Secondly, he estimates the capacity («excellence») of different things to satisfy each need or desire. Thirdly, he assess the difficulty («difficulté») of procuring each good, *i.e.*, its scarcity («rareté»). These three factors determine what Turgot calls «valeur estimative», because it shows the degree of esteem a person attaches to the different objects of his desires» («le degré d'estime que l'homme attache aux différents objets de ses désirs»). A person has a sum of wants [«une somme de besoins»] which he tries to satisfy given his sum of powers («forces») and abilities («facultés»). Every object costs in toil, trouble, labour and time and he must proportion his satisfaction among the different objects according to his powers and abilities. The unit of measurement of value is the sum total of his abilities and for «the isolated man the *estimative value* of an object is precisely the portion of the sum of his abilities which corresponds to the desire he has for that object, or the portion that he is willing to use to satisfy this desire» (88).

Then Turgot introduces commerce: two persons («sauvages») exchange two goods – maize and firewood – of given quantities. There is a bargain between them and they agree on an exchange ratio. Fi-

[1] See also Menger 1923, 333-335. [*Anmerkung zu Seite* 257].

[2] «Le commerce n'est qu'un échange de valeur pour valeur égale, et que relativement à ces valeurs il n'y a ni perte ni gain entre les contractants» (Quesnay 1846 [1766], 196).

[3] Turgot 1919 [1769]. On the dating see Meek (ed.) 1973, 77, who provided an English translation. Page references, unless noted, to the French edition. The essay (in fact, a draft of an article) was written according to Du Pont for Morellet's *Dictionnaire du commerce*. 1769 was the year of the circulation of a leaflet for the Dictionary.

nally, however, both gain from trade. The estimative value is personal to each of them.

When the exchange is concluded, he who gives, for example, four measures of maize for five bundles of firewood, prefers undoubtedly these five bundles to the four measures of maize. He ascribes to them a higher estimative value. But, from his side, he who receives the four measures of maize prefers them to the five bundles of firewood. This superiority of estimative value, attributed by the person who acquires to the thing he acquired over the thing he surrendered, is essential to exchange, because it constitutes its sole motivation. Each one would have remained, as he was, if he did not have an interest, a personal gain to trade; if, relatively to himself, he did not think that he would have received more than he gave.

(91)

This passage is pivotal, because it transfers us from an exchange of equivalent values to an exchange where everybody profits from exchange.[1] According to Georgescu-Roegen (1983, cvi-cvii),[2] this is «the first clear departure from the Aristotelian dogma», that is, from the «physicalist explanation that in a true exchange the traders ought not to gain any value; each ought to receive the same value (or the same embedded labor) as that surrendered (*Ethica Nicomachea*, v)». He adds: «Yet Turgot still could not free himself completely from the Aristotelian tradition, for he went on to say that "this difference of the estimative value is reciprocal and exactly equal for each party"».

Turgot continues:

Yet, this difference of the estimative value is reciprocal and exactly equal for each party. Since, if it were not equal, one of them would want the exchange to a lesser extent and he could have forced the other to come closer to his price with a better offer. It is, therefore, always rigorously true that each party gives equal value in order to receive equal value. If one gives four measures of maize for five bundles of firewood, one also gives five bundles of firewood for four measures of maize and, consequently, four measures of maize are equivalent, in this particular exchange, to five bundles of firewood. These two things have, therefore, an equal exchangeable value.

(91)

Georgescu-Roegen is correct when he notes that Turgot could not free himself completely from the Aristotelian tradition. Indeed, Turgot writes that the equality of exchangeable value is the necessary condition of free exchange («c'est précisément que cette *valeur échangeable* dont l'égalité est la condition nécessaire d'un échange libre», p. 91). Where Edgeworth sees indeterminateness and argues that be-

[1] Below (93) he notes: «Il est bon d'observer ici que l'introduction de l'échange entre nos deux hommes augmente la richesse de l'un et de l'autre, c'est-à-dire leur donne une plus grande quantité de jouissances, avec les mêmes facultés». The notion that commerce increases wealth is especially marked in Condillac 1794-1795, pt. 1, ch. 6.

[2] See also Georgescu-Roegen 1973-1974. This opinion is not shared by Lowry 1987, ch. vii.

tween the starting positions of a negotiation there is ἄκριτος ἔρις καὶ ταραχή,[1] Turgot sees an exact mathematical solution. The Aristotelian equivalence is transferred to a precise division of the gains from trade.

In Turgot the estimative values of both sides assume in exchange a median price which he calls «valeur appreciative», and which functions as exchangeable value. The appreciative value is the mean of the estimative values, known privately to each contracting party. As in the *Réflexions,* Turgot adds two more traders, one for each good, in order to derive a new appreciative value. We have here, what Jevons (1965, 90) has called the «law of indifference», that is of a single price. He then goes on to add more traders to derive the market price.

However, the truly Aristotelian characteristic in Turgot's analysis is his conclusion about the measure of value. Exploring the difference between price and value he defines price as «the thing we give in exchange for another» («Le *prix* est la chose qu'on donne en échange d'une autre»: 94). On the contrary, we cannot measure value (*l'impossibilité d'énoncer la valeur en elle-même*). He goes on:

How can we find, in truth, the expression of a relation the first term of which, the numerator, the fundamental unit, is a thing incapable of estimation, and which is known in the vaguest manner? How can we say that the *value* of an object corresponds to the two per cent of the capacities of a person, and of which capacities are we talking about? We most certainly must take time into account. But at what interval shall we fix it? […] And what thread could guide us in such a labyrinth of calculations, all the elements of which are indeterminate? It is, therefore, impossible to express value in itself. The only thing we can say in this respect is that the *value* of one thing is equal to the *value* of another. The interest that is understood or sensed between two people, establishes this equation in each particular case, without ever thinking of *adding* the capacities of a person in order to compare the total to each object of need. Interest fixes always the result of such a comparison, but it is never being made, nor can it be achieved.

The only way to express *value* is therefore to say that one thing is equal to another in value. … We measure value by comparing it to values, as we measure length by applying lengths. In both means of comparison, there is no *fundamental unit* given by nature; it is only an *arbitrary unit* set by convention.

(94-95)

Two thousand years before Turgot, Aristotle wrote (*NE*, 1133b18-19):

Now in truth, it is impossible that things differing so much should become commensurate, but with reference to need they may become so sufficiently. There must, then, be a unit, and that fixed by agreement.

[1] Edgeworth 1881, 29. The phrase meaning «indiscriminate strife and confusion» comes from Demosthenes' *On the crown* (Περί στεφάνου) (Demosthenes 1903, 18.18). Equally, Cantillon 1755, II.ii argued that the result of negotiations is not determined with geometrical precision.

Karl Marx

Classical political economy ends with Karl Marx. In the first volume of *Das Kapital*, Marx starts his analysis with Aristotle in order to leave him behind. Marx' passage is well known (1962 [1867], 73-74). In fact, it is the first acquaintance with *NE* of those economists, whose training included the work of the German philosopher. Marx analyzes through Aristotle the equivalent form of commodities citing in Greek excerpts from the Stagirite. Aristotle, according to Marx, understood that the expression «of the money-form of commodities is only the further development of the simple form of value». This is because the expression «five beds are equal to one house» is not different (διαφέρει γὰρ οὐδὲν) from the expression «~~ἀντιλαμβάνεται ὅτι ἡ έκφρoση τῆς χρηματικῆς μορφῆς τῆς αξίας τῶν ἐμπορευμάτων~~», «five beds are equal to the money sum these beds are worth». And he focuses on Aristotle's statement of inability to find a common measure of value. The crucial passage for Marx is *NE*, 1133b16-21: «for neither would there have been association if there were not exchange, nor exchange if there were not equality, nor equality if there were not commensurability. Now in truth, it is impossible that things differing so much should become commensurate, but with reference to need they may become so sufficiently».

The passage in Marx has as follows:

> The two latter peculiarities of the equivalent form will become more intelligible if we go back to the great thinker who was the first to analyze so many forms, whether of thought, society, or Nature, and amongst them also the form of value. I mean Aristotle. In the first place, he clearly enunciates that the money-form of commodities is only the further development of the simple form of value – *i.e.*, of the expression of the value of one commodity in some other commodity taken at random; for he says –
>
> 5 beds = 1 house κλῖναι πέντε ἀντὶ οἰκίας
>
> is not to be distinguished from
>
> 5 beds = so much money. κλῖναι πέντε ἀντὶ ... ὅσου αἱ πέντε κλῖναι
>
> He further sees that the value-relation which gives rise to this expression makes it necessary that the house should qualitatively be made the equal of the bed, and that, without such an equalisation, these two clearly different things could not be compared with each other as commensurable quantities. «Exchange», he says, «cannot take place without equality, and equality not without commensurability» (οὔτ' ἰσότης μὴ οὔσης συμμετρίας). Here, however, he comes to a stop, and gives up the further analysis of the form of value. «It is, however, in reality, impossible (τῇ μὲν οὖν ἀληθείᾳ ἀδύνατον) that such unlike things can be commensurable» – *i.e.*, qualitatively equal. Such an equalisation can only be something foreign to their real nature, consequently only «a makeshift for practical purposes».
>
> Aristotle therefore, himself, tells us, what barred the way to his further analysis; it was the absence of any concept of value. What is that equal something, that com-

mon substance, which admits of the value of the beds being expressed by a house? Such a thing, in truth, cannot exist, says Aristotle. And why not? Compared with the beds, the house does represent something equal to them, in so far as it represents what is really equal, both in the beds and the house. And that is – human labour

(1906 [1867], I.I.76-79; 1962 [1867], 74)

Aristotle has stopped, where the critique of political economy starts. «Aristotle's genius shines in this alone, that he discovered, in the expression of the value of commodities, a relation of equality. The peculiar conditions of the society in which he lived, alone prevented him from discovering what, "in truth", was at the bottom of this equality».

Marx keeps from Aristotle only the equality of exchange in order to make labour the foundation of value. He has no use of 'need' as a concept. He only adheres to the philosophical conclusion that commensurability is impossible and that only «with reference to need they may become so sufficiently» («πρὸς δὲ τὴν χρείαν ἐνδέχεται ἱκανῶς, «Notbehelf für das praktische Bedürfnis»). Marx, of course, does not ignore 'need'. He had already analyzed the use value of commodities and he is now examining the equivalent form of commodities. It is only labour that can create surplus value in the sphere of production. Equivalence is retained only in the sphere of circulation or exchange of commodities, which is characterized by «Freedom, Equality and Bentham» (1962 [1867], 189).

He is, however, the most Aristotelian of all economists. He argues as if Aristotle had lived in a capitalist society. On the one hand, as Meikle (1995, ch. 9) has noted, he follows the Aristotelian doctrine of actualities (ἐνέργειαι, see *NE*, 1115b 20-22). Labour producing use values has a given τέλος. As concrete labour it cannot operate as a measure of value. Marx constructs the notion of abstract labour which is equated in the process of exchange. As Rubin (1973 [1928], 125-126) explains, the object of the theory of value in Marx does not make it necessary

to find a practical standard of value. In reality, the theory of value has a completely different task, theoretical and not practical. It is not necessary for us to seek a practical standard of value which would make *possible* the equalization of the products of labor on the market. This equalization takes place *in reality* every day in the process of market exchange. In this process, spontaneously, a standard of value is worked out, namely money, which is indispensable for this equalization. This market exchange does not need any type of standard which is thought up by economists. The task of the theory of value is completely different, namely to grasp and explain *theoretically* the process of equalization of commodities which takes place regularly on the market, in close connection with the equalization and distribution of social labor in the process of production, *i.e.*, to uncover the *causal* relation between both of these processes and the laws of their changes. *The causal analysis of the actually* *realized processes of equalization of various commodities and various forms of labor,* and not the finding of practical standards for their comparison – this is the task of the theory of value.

Neoclassical Economics and *Nicomachean Ethics*

With Marx the non-subjectivist school of political economy makes a full circle. For him, classical political economy ended with Ricardo in England and Sismondi in France.[1] But in the middle of 19th century a new subjectivist political economy made its appearance. This school which eventually consolidated into the neoclassical orthodoxy came to dominate the science of economics.

Neoclassical theory at a superficial level bears a commonality with the Aristotelian analysis of exchange. Indeed, certain economists (Soudek 1952, Jaffé 1974) see in the Greek philosopher the precursor of neoclassical analysis. Even the proposed change of the name of our science to "catallactics" has been attributed to Aristotle.[2] Indeed, the centrality of exchange in neoclassical economics would seem to make the passage of NE, v more relevant to it, while the concept of utility can be seen as a development of the notion of *chreia* [need]. Nevertheless, the neoclassical economists never felt an affinity to the ancient philosopher. Jevons (1965 [1871], 276-277) concludes his *Theory of Political Economy* with a section entitled «The Noxious Influence of Authority» where he protests against deference to authority including John Stuart Mill, Adam Smith or Aristotle, while Carl Menger (1994 [1871], 395), so Aristotelian in many other respects, does not fail to point out the error in NE. Even Francis Y. Edgeworth, whose erudition and knowledge of the ancient texts is singular, and who quotes at the slightest opportunity a classical author, in his analysis of the catallactic molecule, the closest he comes to NE is a reference to the concept of mediocrity [μεσότης], as a possible solution to the indeter-

[1] Marx 1961 [1859], 37.

[2] Richard Whately writes: «The name I should have preferred [for Political Economy] as the most descriptive, and on the whole least objectionable, is that of CATALLACTICS or the 'Science of Exchanges'» (1832, Lecture 1, §9). In the note to the passage, he writes: «In the present instance, however, I am not sure that, if Aristotle had had occasion to express my meaning, he would not have used the very same word. In fact I may say he has used another part of the same verb in the sense of "exchanging"; (for the Verbals in -ικὸς) are, to all practical purposes, to be regarded as parts of the verbs they are formed from) in the third book of the *Nicom. Ethics* he speaks of men who hold their lives so cheap, that they risked them in exchange for the most trifling gain (καταλλάττονται). The employment of this and kindred words in the sense of "reconcilement", is evidently secondary, reconciliation being commonly effected by a compensation; something accepted as an equivalent for loss or injury». The passage he is referring is NE, 1117b19-20 (καὶ τὸν βίον πρὸς μικρὰ κέρδη καταλλάττονται). There are, however, more appropriate passages in Aristotle for this word [NE, 1158b1-5, *Pol.* 1257a25]. See also Mises 1963 [1949], ch. 14; Rothbard 1987; and the *Preface* to Jevons 1965 [1871].

minateness of bargaining (1881, 55, fn. 2). It is in truth impossible (τῇ μὲν οὖν ἀληθείᾳ ἀδύνατον) for a subjectivist approach of the theory of value, where both parties gain to be reconciled with the notion of equivalence in exchange so prevalent in Aristotle. Subjectivists feel therefore freed from the Philosopher's curse. In the words of Ludwig von Mises (1963 [1949], 203-204):

An inveterate fallacy asserted that things and services exchanged are of equal value. Value was considered as objective, as an intrinsic quality inherent in things and not merely as the expression of various people's eagerness to acquire them. People, it was assumed, first established the magnitude of value proper to goods and services by an act of measurement and then proceeded to barter them against quantities of goods and services of the same amount of value. This fallacy frustrated Aristotle's approach to economic problems and, for almost two thousand years, the reasoning of all those for whom Aristotle's opinions were authoritative. It seriously vitiated the marvelous achievements of the classical economists and rendered the writings of their epigones, especially those of Marx and the Marxian school, entirely futile. The basis of modern economics is the cognition that it is precisely the disparity in the value attached to the objects exchanged that results in their being exchanged. People buy and sell only because they appraise the things given up less than those received. Thus the notion of a measurement of value is vain. An act of exchange is neither preceded nor accompanied by any process which could be called a measuring of value.

Conclusions

In political economy the problem of value has been posed in terms that has been first set by Aristotle. Aristotle's analysis suggested 1. the notion of the equivalence of exchange, only things equal in value are exchanged, 2. that there is a common measure able to provide this equality, 3. that this measure is conceptually separate from money, since exchange of equivalent commodities can be effected without it and 4. that the voluntary association of persons, indeed society itself, is based on reciprocity which is made possible because such a measure exists. How this measure can be derived was not suggested by the ancient philosopher. In NE, v we find both the notion of «need» and of the «work» of the trading parties. Since his analysis ends with the admission of philosophical defeat, *i.e.*, that equality in exchange is achieved in practice, but philosophically it is impossible to find a common measure of value, his analysis was open to different interpretations by subsequent scholars. The themes of «need» and «work» existed together in economic analysis for a long time providing the two strands of thought in the theory of value: the subjective, based on utility and the objective, based on labour (or cost of production). For the Scholastics, the mercantilists and the natural law philosophers both themes coexisted and the analytical advance on Aristotle's analysis was indeed limited. It is with Turgot, Adam Smith and Marx that this analysis proceeds to a full theory of value and it is only with the neoclassical school that the terms in which Aristotle has set the problem are finally abandoned.

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