

# **Democritus and his Influence on Classical Political Economy**

**Panayotis Michaelides**

*National Technical University of Athens*

**Ourania Kardassi**

*Athens University of Economics and Business*

**John Milios**

*National Technical University of Athens*

## **ABSTRACT**

Most essays on the economic ideas of the ancient Greeks are concerned with the Socratic philosophers and very few references to the economic ideas of Democritus can be found. The present paper demonstrates that the ancient Greek philosopher Democritus expressed many interesting psychological and economic ideas, some of which can also be found in the works of the Socratic philosophers that followed. In this manner, the paper concludes that the Aderian philosopher, despite the fact that he did not engage himself primarily with economic issues, as his economic ideas were mainly developed as part of his psychological and philosophical teaching, is nevertheless a fine example of how ancient Greek thought contributed to the formation of the epistemological presuppositions of Political Economy, making Man the Subject of History and of all Social Process.

J.E.L. Classification: B00, B31

Key Words: Democritus, philosophy, ethics, psychology, economics

## 1. Introduction

The significant influence of ancient Greek thought on the writings of Classical economists is hard to be gainsaid. Adam Smith, for example, obtained considerable data from ancient Greek literature, not only in his major philosophical work, *The Theory of Moral Sentiments*, but also in his *Wealth of Nations*, the fundamental work of Classical Political Economy (Scott 1940; Lowry 1987). Also, many economic problems have been treated in ancient Greek literature: e.g. Aristotle's approach to the exchange process and private property (*The Nicomachean Ethics, Politics, etc.*), Xenophon's comments on the division of labour (*Cyropaedia*), as well as Plato's remarks on the same subject (*Republic, Laws, etc.*) are considered by many authors (e.g. Milios and Karasmanis 1988) to be some of the most famous ancient Greek contributions to economic thought.

The ideas of the so-called Socratic philosophers, i.e. Xenophon, Plato and Aristotle on atomistic behaviour, division of labour, foreign trade, exchange, value, interest, etc. have been often treated as the forerunners of modern views on these subjects (Lowry 1987, 1979; Petrochilos 1999, 2002). As a consequence, most of the research that has been conducted on the economic ideas of ancient Greek philosophers focuses on the Socratic philosophers, as well as on Hesiod, Aristophanes and Thucydides and, as a result, very few references have been made to the works of other ancient Greek philosophers, and more specifically of Democritus, who is mainly known as the "father" of atomic theory.

According to Burnet (1968, p. 157) Democritus, was "one of the greater writers of antiquity". Zeller, the well-known author on ancient Greek thought, characterises Democritus as "superior to all earlier and contemporary philosophers in wealth of knowledge" (Russell 1975, p. 82). Also, he stressed that the Greek philosopher was a "universal mind who embraced the whole of the philosophical knowledge of his time, and in this respect can be compared only with Aristotle" (Zeller 1969, p. 65).

The purpose of the present paper is twofold. Firstly, it makes an attempt to demonstrate that Democritus expressed many interesting economic and psychological ideas some of which are identical to those of the Socratic philosophers (De Roover, 1974; Taylor, 1955; Robertson and Taylor, 1957). Secondly, it tries to give a partial answer to

the question as to whether, or to what extent, these economic ideas of Democritus could be regarded as the early formulation of notions typically belonging to the theoretical system of economic science.

The structure of the paper is as follows: Section 2 presents a brief biographical note on the life and works of Democritus. Section 3 presents the main economic and other related ideas that are attributed to the ancient Greek philosopher. Section 4 presents what we consider to be the affinity and influence of Democretian ideas to Classical Political Economy. Finally, section 5 concludes the paper.

## **2. Democritus: A Biographical Note**

Democritus, the “unknown man” as Burnet (1968, p. 157-158) named him, was born between 460-470 B.C. in Abdera, Thrace. His family was rich and he inherited an important fortune, the greatest part of which he spent on his theoretical and mainly empirical education (Marx 1977, p. 75). He travelled a lot “in search of knowledge” (Sarton 1966, p. 252) and visited many famous, at the time, cultural centres of the world, such as Egypt, Babylonia, Persia, etc. (Diels 1954).

His works included mathematics, physics, astronomy, ethics and poetry. Only a small part of his fragments was preserved and some were found either in the works of Aristotle, Diogenis Laertius and Stobaios, or under the name Democrates.<sup>1</sup>

There is no doubt that it is a great loss for philosophers, scientists and economists, that Democritus’s writings have not been preserved throughout the ages. Following Karayiannis (1988, p. 371), this could be due to the Epicurian philosophers who did not wish them to be saved and “probably did not care to multiply copies of a writer whose works would have been standing testimony to the lack of originality that marked their own system” (Burnet 1968, p. 157). “[T]he considerable number of fragments that have survived [...] are nearly all taken from the ethical works” of Democritus (Kirk and Raven 1957, p. 404), on which the present paper is based.<sup>2</sup>

---

<sup>1</sup> According to Sinclair (1967, p. 65), the later fragments are of questionable authenticity.

<sup>2</sup> Some authors (e.g. see Havelock 1957, p. 126) believe that Democritus wrote in “a period when readers were still outnumbered by listeners”. It is thus “not surprising that he compressed his ideas”.

Thrasylus classified his writings in 5 categories of 13 (Diels 1954, p. 90-2) or 15 (Mullachius 1883, p. 372-7) tetralogies. Following Karayiannis (1988, p. 371), this caused his characterisation as “pentathlos philosopher” (physics, mathematics, technical subjects, music and ethics), while, according to Spiegel (1971, p. 13), Democritus’s writings also include a treatise in Economics.

Democritus was a very educated person<sup>3</sup> and earned the esteem of his fellow citizens and his contemporary writers. He spent his life in peace, always expressing a pleasurable attitude, a characteristic which made his compatriots, as well as many contemporary writers, call him the “laughing philosopher” (e.g. Gomperz 1969, p. 368; Guthrie 1965, p. 409; Avtzis 1969, p. 13). He died at a very old age, probably over a hundred years old (Karayiannis 1988, p. 372), without however leaving behind him a distinguished philosophical school, like the one of Plato in Athens (Windelband and Heimsoeth 1980, p. 117). The philosophers Methodoros, Anaxarchus and Nausiphanes are considered by many authors (e.g. Zeller 1969, p. 69) as Democritus’s disciples.

### **3. Democritus’s Main Ideas**

#### *General “Laws”*

Democritus followed and developed the “cosmic theory” of his teacher Leucippus, who taught that everything that exists consists of atoms and vacuum. In particular he enlarged this theory, stating that the universe was made up of two parts, the “plenum” (full) or “matter” and the “vacuum” (void) or “empty”.<sup>4</sup> Also, he followed the empirical method for the establishment of his theories, as well as for the verification of his conclusions (Marx 1977, p.75). He stated that “in reality we know nothing, for truth is in the depths” (Diels 1954, fr. 117), and second, he declared that everything is driven by “necessity” and “causality”, adopting his teacher’s Leucippus beliefs that “nothing occurs at random, but everything for a reason and by necessity” (Kirk and Raven 1957, p. 413).

---

<sup>3</sup> Even Aristotle wrote that Democritus had “studied everything” (Papadopoulos 1982, p. 8).

*The Psychology of Pleasure and Pain*

Democritus conceived the existence of various material wants and needs as the main cause of important economic phenomena (e.g. the division of labour). However, one can only find only a few interesting ideas concerning rational behaviour for the fulfilment of psychological and economic needs, as also other authors have noted (e.g. Karayiannis 1988, p. 374).

More specifically, Democritus attributed rational economic behaviour of individuals to psychological grounds, i.e. to the comparison between “pleasure” and “pain” and declared that “the best thing for a man is to pass his life so as to have as much joy and as little trouble as may be” (Diels 1954, fr. 189), and thus should be pursuing “eudemonia”<sup>5</sup>, which is derived from the well being of the household (Diels 1954, fr. 140). In addition, he stated that “happiness is a property of the soul, as is unhappiness” (Diels 1954, fr. 170) and thus the criterion between “the advantageous and the disadvantageous is pleasure and displeasure” (Diels 1954, fr. 188; Voegelin 1957, p. 300), which practically means that the individual should be in a position enabling him to balance between the various degrees of (dis)pleasure.

It seems that Democritus considered that the ultimate end of an individual is the fulfilment of a powerful psychological incentive, namely the pursuit of “eudaimonia”, which according to him is attributed to the equilibrium of soul (“psyche”) and is achieved through *moderation*. According to this psychological principle, he stated that the (economic) actions of individuals should – as well – have as an end a moderate and not an extreme material reward (Diels 1954, fr. 3, 102, 285): An individual should always evaluate his economic actions and behaviour through the criterion of “the limit between the beneficial and the non-beneficial” (Diels 1954, fr. 188).<sup>6</sup>

The two philosophical notions, pleasure and pain, which were first put forward by Democritus, were later adopted and further developed by Democritus’s famous disciple Protagoras (Lowry 1981, p. 813), and, of course, Plato (Lowry 1998, p. 14).

---

<sup>4</sup> For more about Democritus’ atomic theory see Kirk and Raven (1957), Gomperz (1969) and Guthrie (1965).

<sup>5</sup> Aristotle called it “superior pleasure” (*Eudemian Ethics*, 1214a, ♣ 5-10).

<sup>6</sup> Aristotle called this limit “norm” (*Nicomachean Ethics*, 1105a, ♣ 1-10).

Democritus identified these two notions, namely pleasure and pain, with goodness and evil (Boas 1961, p. 53), which although they were developed as part of his ethical and psychological teaching, could alternatively be applied to the field of economic and social decisions of individuals as well.<sup>7</sup>

### *On (Over)Consumption*

Democritus was against overconsumption and the wasteful use of goods (Kanellopoulos 1985, p. 67). He wrote that “it is a useful thing for someone to know when he must save, suffer hunger or spend much” (Diels 1954, fr. 229) and connected this forms of behaviour with ethical virtue and the moderation of consumption and wealth and not with speculative actions. As we have seen, he believed that economic actions must have a moderate and not an extreme psychological reward (Diels 1954, fr. 3, 102, 285) and declared that “the most pleasant things become unpleasant if moderation does not prevail” (Diels 1954, fr. 233), because “moderation increases and enlarges pleasures making them stronger” (Diels 1954, fr. 211).

It is obvious that Democritus related satisfaction with a moderate and not an increasing or maximum consumption, since he conceived the moderate and not the extreme movements of the soul (i.e. “psyche”) as precondition for happiness. He wrote (Diels 1954, fr. 191): “Cheerfulness comes to man through moderation and enjoyment and harmony of life; excess and defect are apt to change and produce great movements in the soul” (Sarton 1966, p. 253). He combined the principles “nothing in excess” and “nothing in shortage”, to claim that he did not like “the more or less normal”, since “symmetry in all things is good” (Diels 1954, fr. 102). Conclusively, he considered that a moderate rate of consumption produces great happiness, while a high rate of consumption produces great pain (Diels 1954, fr. 231).<sup>8</sup>

---

<sup>7</sup> Aristotle defined goodness as a useful and pleasant thing and evil as a harmful and unpleasant one (*Nicomachean Ethics*, 1104b, ♣ 35-40).

<sup>10</sup> Democritus’ student Protagoras, enlarged the views of his teacher and connected the intensity of the soul’s movements with the different degrees of utility and pain (Lowry 1981, p. 816; Plato: *Protagoras*, 356a-b) developing several basic elements (Lowry 1981, p. 816; Lowry 1987, ch. 2; Petrocilos 2002, p. 602).

*On the Heterogeneity of Pleasures, Wealth, Justice and Democracy*

Democritus insisted on the superiority of spiritual, moral and psychological pleasures as opposed to material ones and opposed the “chrematistic” actions of individuals (Karayiannis 1988, p. 382). He wrote: “Happiness doesn’t reside in cattle or gold: the soul is the dwelling place of one’s good or evil genius” (Diels 1954, fr. 171) and opposed the material motive of increasing money property: “He who is the slave of money can never be righteous” (Diels 1954, fr. 50).

It is obvious from his overall opposition to overconsumption and the accumulation of wealth that he rejected the profiteering function of the market (Karayiannis 1988, p. 382). He argued that “in every man, the desire for wealth is perpetual; when it has not been acquired, it corrupts men, when it has been acquired, it worries men with its concern, when it has been lost, it sorrows men” (Diels 1954, fr. 25B). Additionally, “when the passion of wealth does not find satiation it becomes worse than the greatest poverty because the stronger the desires are, so are the privations” (Diels 1954, fr. 219).

According to Democritus, every economic transaction should be based on justice; He wrote: “Justice is to do what should be done; injustice is not to do what should be done, but to evade it” (Diels 1954, fr. 256). Democritus was against the material riches which resulted from transactions that aimed at the accumulation of wealth exceeding the absolutely necessary goods of life.<sup>9</sup> Above this level, he believed, wealth was the effect of an incurable *psychic disease* like “gangrene” (Diels 1954, fr. 281).

Following Karayiannis (1988, p. 383), Democritus stressed “the shameful behaviour of man concerning unfair wealth; he gave a direct correspondence between the decrease in man’s virtue and the increase of unfair exchange and he emphasized unfair exchange as a mark of the moral death of man”. Thus, Democritus considered the elements of virtue and morality of man as the sufficient keys, which ensure what he considered to be fair economic operation. He wrote: “Wealth without understanding is not a safe possession” (Diels 1954, fr. 77). According to Trever (1978, p. 17), Democritus

---

<sup>9</sup> Aristotle was also against unfair transactions, which he called “profiteering” (*Nicomachean Ethics*, 1232a, ♣ 15), while Plato, as well, believed that the moderate level of wealth must be produced only through fair action (*Laws*, 661b).

was “the forerunner of Socrates in his insistence upon right use as a criterion of wealth”.<sup>10</sup>

It is not by chance then that the Abderetian philosopher never examined the function of the market, or the formation of prices and distribution of products (Karayiannis 1988, p. 383). He only wrote about the precondition of equal advantages as a fair starting point of economic operation.<sup>11</sup>

Democritus was a supporter of democracy and declared that “the poverty of democracy is better than the prosperity which allegedly goes with an aristocracy or monarchy, just as liberty is better than slavery” (Diels 1954, fr. 251). He was also of the opinion that the citizens, mainly the rich ones, should show altruistic behaviour and stated: “If the rich and influential can bring themselves to lend the poor and help them, herein lies pity, an end to isolation, friendliness, mutual aid, unity among citizens, and other blessings such as no man can enumerate” (cited in Freeman 1946, p. 321).<sup>12</sup> Such a behaviour can be strengthened by the increase of friendship among citizens, Democritus (Diels 1954, fr. 186) wrote.<sup>13</sup> Finally, the establishment of homonoia required, according to Democritus, a moderate and not an extreme economic inequality among the citizens.<sup>14</sup>

#### *On the Division of Labour and Productivity*

One of the most interesting economic ideas of Democritus is related to the division of resources. Following Gordon (1975, p. 14) “Democritus is the first in a long line of thinkers to argue the superior efficiency achieved by a division of resources”. According to Democritus, the division of labour was caused by the different physical inclinations of men (Karayiannis 1998, p. 384) with the purpose of increasing their creative power (just like animals did) (Diels 1954, fr. 154) and recommended that everyone should work

---

<sup>10</sup> Plato in *Laws* (727A) and Xenophon in *Oeconomicus* (ch. I, 7-8, ♣ 13-14 and ch. II, ♣ 2-3) expressed similar views.

<sup>11</sup> Aristotle has also mentioned this advantage (*Eudemian Ethics*, 1242b, ♣ 15-20).

<sup>12</sup> Xenophon as well, believed in the necessity of altruistic behaviour (*Oeconomicus*, ch. XI, ♣ 9-10).

<sup>13</sup> Petrochilos (2002, p. 602) writes that Protagoras, Democritus’ student, enlarged his teacher’s views and considered *dike* (justice) and *aidos* (shame) as the two most “divinely instilled elements in mankind which make civil society possible” (Lowry 1987, p. 33). Todd Lowry states that “[I]f one accepts these concepts as meaning ‘a sense of order and mutual sympathy’, one gets a clearer picture of Protagoras’s social philosophy, and it is appropriate to suggest the importance of familiarizing oneself with Protagoras’s myth in order to understand Adam Smith’s concept of fellow-feeling or human sympathy in his Theory of Moral Sentiments” (Lowry 1987, p. 33).

<sup>14</sup> Plato expressed very similar beliefs (*Laws*, 679B-C).

according to his own abilities for the completion of a job (Diels 1954, fr. 270). Furthermore, he related this division of labour to their happiness, and suggested that they should not engage in various works but in only one, with which they are satisfied (Diels 1954, fr. 3).<sup>15</sup> Finally, Democritus stated that practicing, exercising, experiencing and teaching in depth and not in extent are equally important to the increase of labour productivity with the physical skills (Diels 1954, fr. 56, 59, 242).<sup>16</sup>

#### 4. Democretian Philosophy and Classical Political Economy

There are two main approaches on whether (or not) the economic ideas of Greek philosophers have been of significance to modern economic thought: a) *Ancient Greek thought is regarded as the beginning of Political Economy* (see e.g. Foley 1974; Lowry 1987).<sup>17</sup>; b) *Greek Economic thought is regarded as common-sense description of ancient Economy*. (e.g. Rubin 1979; Roll 1989).<sup>18</sup> Another version of this approach supported by Finley (1978) and Schumpeter (1954), bases its argumentation on the distinction “between economic analysis and the observation or description of specific economic activities” (Finley 1978, p. 26), claiming that the economic ideas of ancient Greeks have always been descriptive.<sup>19</sup>

---

<sup>15</sup> Plato seems to have adopted this view (*Republic*, 370A-B).

<sup>16</sup> Xenophon (*Oeconomicus*, ch. VII, ♣ 41, ch. XII, ♣ 4), Plato (*Philebus*, 56A, *Laws*, 643C) and Aristotle (*Nicomachean Ethics*, 1103a, ♣ 30-35) adopted similar views in their works.

<sup>17</sup> In this context, for instance, it has been argued that some formulations of Adam Smith concerning the division of labour depend on the corresponding formulations of certain Greek philosophers (Foley 1974, 1975). The concept of the division of labour in the works of Xenophon, Plato and, of course, Adam Smith is also discussed in Todd Lowry's very influential works, who suggests that the hypothesis of an ancient Greek influence and contribution to the concepts of Classical Political Economy is supported by the fact that “Plato clearly understood quantitative efficiency when he recommended the division of labour in the *Republic*” (Lowry 1987, p. 72). As a result, the author advocates in favour of “Charles R. Fay's judgment that both the *Theory of Moral Sentiments* and the *Wealth of Nations* were influenced by the classics” and adds: “William R. Scott's work also supports this thesis” (Lowry 1987, p. 72). Lowry has argued in earlier publications (Lowry 1974; 1981) that Political Economy's conception of circular flow has its roots in Pythagorean ideas and the Platonic tradition (Lowry 1974), while “the theory of quantitative subjective value was worked out in ancient times in great detail with little reference to exchange or commercial values. A presentation of this abstract analysis is found in Plato's dialogue *Protagoras*” (Lowry 1981, pp. 812-13).

<sup>18</sup> Souchon was the first who had claimed that the Ancient Greek contribution to economics was minimal (Sideris 1941, Petrochilos 1999, 2002). According to Gray (1980) there are two reasons explaining the meager Greek contribution to economics (Petrochilos 1999, p. 2). The first is the preoccupation of the Greeks with politics and ethics, which were the worthier ends so that economics at best “was viewed merely as part of ethical inquiry” (Gray, 1980, p. 4). The second reason was the existence of slavery, which rendered – with the exception of agriculture – the work of craftsmen dishonorable (in much the same way the Physiocrats thought more than two thousand years later), and, thus, something which was despised could not be regarded as a matter worth to be studied. For an excellent summary and critique of such views see Petrochilos (2002).

<sup>19</sup> This approach distinguishes Plato and Aristotle, as the major Greek thinkers in the field of economic ideas, but it considers their contribution to be of low analytical value: “In Aristotle we see the first separation and reunion of the positive and the ethical approach to economic process. His is a view of society similar to Plato's [...]. It was the ethical

We agree with Petrochilos (2002, p. 600) that “at the heart of the debate lies the attempt [...] to evaluate ancient societies and economies in terms of present-day criteria and norms and to use the ancients as a battleground to resolve contemporary ideological disputes”.

To take part in this dispute, regarding specifically Democritus’s ideas, one has, as a first step, to answer the question of whether there exists a conceptual affinity between these ideas and the notions on which (each different stream of) modern economic thought is founded.

From the presentation of Democritus’s main ideas in the previous Section of this paper it can be concluded that a conceptual gap separates the ancient Greek philosopher and modern economic thinking.

---

form of Aristotle's views, which served as the content for medieval theories of exchange: they found their first extension in the theory of 'just price'. It was not until the rise of the classical political economy of the eighteenth century that a positive theory of value was first developed” (Roll 1989, p.35). In the case of the Aristotelian economic views, Meikle (1995, p. 2) pointed out that there has been a chaotic interpretation of their meaning and suggests that “since the chaos is of recent origin, perhaps its source lies [...] in some feature of modern thought which was absent from the thought of earlier times [...] it will have something to do with the modern subject of economics”. Meikle (1995) finds that Aristotle does develop a coherent theory of economic value, wealth, exchange and money. The difficulty, however, is that this theory cannot be assimilated into what we call “economics” because it is based on different metaphysical foundations from the Humean metaphysics on which modern economics is built. Meikle (1995) argues that from an Aristotelian standpoint, ethics and economics are competitors over the same ground, as rival sources of reasons for decision-making in the public realm, and they cannot be reconciled (Petrochilos 1999, 2002). Schumpeter (1954) dismissed the economic thought of the Greeks as modest and claimed that those among the classicists and economists who thought more highly of it were confusing it with their general philosophy than (technical) economics. Consequently, Xenophon is treated in a footnote; Plato is found to be not analytical enough and his discussion of the division of labour is considered as commonplace, while in Aristotle “we find decorous, pedestrian, slightly mediocre, and more than slightly pompous common sense” (Schumpeter 1954, p. 57). Finley (1970, 1973), a classicist and ancient historian dismissive of the ancient Greek economic thought claimed that all three of the major philosophers, i.e., Plato, Xenophon and Aristotle have not contributed much to economics. Finley adopts largely the Schumpeterian approach (Schumpeter 1954, pp. 57-60) in arguing that in the absence of the mass of exchange value phenomena, it was simply impossible for the Greeks to engage in economic thought. Aristotle “offered the rudiments of analysis” but he “then becomes doubly troublesome” wrote Finley (1978, p. 28). The main reason for Aristotle's failure is, according to Finley, the simple fact that he never intended to study economics in the first place; he was mainly interested in ethics and politics. Thus, he agrees with the Polanyi group (Polanyi *et al*, 1957), of which he was a member, about the non-market features of the Greek economy.

For example, Democritus's idea of "eudemonia" and the tension between pleasure and pain on which it is founded has nothing in common with Bentham's "hedonic calculus" on which modern neoclassical theory is based. In contrast to Bentham, Democritus considers different kinds of pleasures to be inhomogeneous, i.e. hierarchically distinguishable, non compatible, qualitatively different and thus quantitatively not comparable with one another. It is known from J.-S. Mill's critique of Bentham's philosophical utilitarianism, that the rejection of the premise of a homogeneous utility (connecting in a qualitatively similar way any rational person to economic goods) renders the formulation of the neoclassical marginal utility approach impossible. We may, thus, detect a notional link between Democritus and the philosophy of J.-S. Mill, who argued that "neither pains nor pleasures are homogeneous, and pain is always heterogeneous with pleasure" (Mill 1987, p. 282),<sup>20</sup> but not between Democritus and Neoclassical economics.

A similar lack of notional affiliation may be concluded between Democritus's "nothing in excess" principle and any modern economic idea of profit or utility maximisation. We agree, therefore, with Karayiannis (1988, pp. 375, 377, emphasis added) that *no "exact notion or principle such as the neoclassical one concerning the rational use of limited resources for the achievement of multiple ends" could be found in the writings of Democritus.*

---

<sup>20</sup> Based on the idea of inhomogeneous pleasures, J.-S. Mill (1987, p. 281) writes: "Better to be Socrates dissatisfied than a fool satisfied". Compare the following formulation by Democritus: "Happiness doesn't reside in cattle or gold: the soul is the dwelling place of one's good or evil genius" (Diels 1954, fr. 171).

The same conclusion may be reached in regard to the notional content of the *division of labour* in Democritus's writings on the one hand and Classical Political Economy (Adam Smith's *The Wealth of Nations*) on the other. Analogously to Plato's *Republic*<sup>21</sup>, the division of labour appears to be the *par excellence* concept, which could connect Democritus's writings with Political Economy. Firstly, Democritus considered the division of labour as the outcome of one basic principle (Karayiannis 1988, p. 384): he argued that men have been taught from various animals how to practice different jobs (Diels 1954, fr. 154) and thus, men adopted and followed the animals' division of labour and resources with the purpose of increasing their creative power (Karayiannis 1998, p. 384). The Abderetian philosopher believed that the division of labour "was *caused* by the different physical inclinations and skills of men" (Karayiannis 1998, p. 384, emphasis added). Just like the similar principle developed later by Plato, who declared that "one man is naturally fitted for one task, and another for another" (*Republic*, 370B), it is obvious that Democritus practically implied that different people have different talents with regard to work. Certainly, this does not mean that every man is free to do what he wishes, but that he is obliged to fit to the class and do the job that is appropriate to him, and thus he recommended to the masters of slaves to use everyone of them according to their abilities for the proper completion of a job.

The Democretian division of labour regards that different people do qualitatively different labour. Thus, labour is not homogeneous, for Democritus (as neither was for Plato). That is the reason why Democretian theory (just like the Platonic one), "cannot constitute the basis neither of an institutionally (i.e. typically) non-hierarchical society ('all citizens are equal'), nor of a value theory" (Milios and Karasmanis 1995, p. 57).

---

<sup>21</sup> See Milios and Karasmanis (1995).

If we suppose that Smith adopted Democritus's idea about the economic significance of the division of labour (an idea which is though common in all economists before Smith, for instance Quesnay, Turgot, etc.), we have also to accept that Smith turned upside-down Democritus's conceptual structure, since Smith regards the "natural talents" of different people to be "not [...] the cause, as the effect of the division of labour" (Smith 1981, I ii 4, p. 28). For Smith, the cause of the division of labour is man's "disposition to truck, barter and exchange" (Smith 1981, I.ii.5, p. 28). Smith was aware of the fact that the division of labour acquires its fully developed form only in a society with fully developed market relations<sup>22</sup> and therefore he "is careful to point out that Division of Labour had not proceeded very far [in ancient Greece]" (Scott 1940, p. 96).

Finally, Smith advocates for a division of labour, which enables the maximum possible mobility of the work-force, while Democritus relates, as seen, the division of labour – which takes place according to the physical and spiritual inclinations of individuals – with their happiness and satisfaction.

It is apparent that a theoretical diversion is hidden behind a first (phenomenal) convergence of Democritus' and Smith's formulations, with respect to the division of labour. To summarize we could say that for Smith the division of labour is the *cause* that explains human inclinations and capacity, for Democritus this is the *result*.

Our conclusion that Democritus's ideas do not constitute the forerunners of Classical (or Neoclassical) economic notions does not mean that we consider them not to have influenced modern economic thought. Such an approach to ancient Greek philosophy would underestimate its importance and influence on the formulation of the philosophical roots of Classical Political Economy. In other words, even if ancient Greek thought contains only fragments of an economic and theoretical analysis, this does not necessarily mean that it has not influenced, in a philosophical-epistemological sense, the formulation of the notions of Classical Political Economy (Milios and Karasmanis, p. 53). In fact, Political Economy is always connected with a philosophical as well as a sociological conception of science and society.

---

<sup>22</sup> "[T]he Division of Labour is limited by the Extent of the Market" (Smith 1981, I.iii.1, p. 31).

It is first of all obvious, that Political Economy (as well as every other social science), owes to Greek Philosophy the conception of Man as the Subject of History and of all Social Process: This anthropological philosophical conception, being the antipode to all kinds of theological approaches, connects ancient Greek thought with the enlightenment and modern age. In this manner, “ancient Greek philosophy could be regarded as a major contribution to the formation of the epistemological presuppositions of Political Economy” (Milios and Karasmanis 1995, p. 62).

The ideas of the sophists and Democritus were important for putting mankind in the centre of the intellectual debate (Baeck, 1994, p.45). Democritus, besides Socrates (Petrochilos 20002, p. 603), was the first to move from a philosophy of nature to a philosophy of mankind. The central point of the Democretian philosophy seems to be the prevalence of logic and justice over society; according to this Democretian viewpoint, all social issues, including political and economic relationships, become essentially ethical issues.

Moreover, we can identify a much more particular epistemological influence of ancient Greek and more specifically of the Democretian philosophy on Classical Political Economy: namely the conception that (economic) phenomena possess an inherent, law-determined causality and regularity (a concept also shared by the natural sciences), which, though, does not appear to the direct observation of the agents of production, but constitutes the hidden causal core of the directly observable phenomena (Milios and Karasmanis, 1995). The aim of science is, therefore, to reveal this hidden essence of observable processes.

According to Democritus everything depends on “causality” and “necessity” (Karayiannis 1998, 374). On this principle, the Abderetian philosopher declared that “the whirl or vortex is called necessity because it produces the necessary mechanically and theoretically determinable” (Kirk and Raven 1957, p. 405). This major epistemological conception, probably helped Smith and later Ricardo to formulate an objective theory of value (the theory of labour-value). The labour-value is the law-determined regularity, which is hidden behind (and governs) the directly observable exchange patterns of useful things.

Smith uses the adjective “natural” to denote either that a situation corresponds to the “natural right” of the individual, i.e. to the “obvious and simple system of natural liberty” (Smith 1981, IV.ix.51 p. 687), or that an economic phenomenon is governed by a law-determined regularity, which exists independently of the will or the knowledge of the participants to economic life: natural price, natural wage, natural profit, etc. (see Smith 1981, I. vii, pp. 72-81). In its second meaning, the notion “natural” refers also to a distinction between the directly observable and the “invisible-essential” side of economic processes, as indicated by the famous notion of the “invisible hand” (Milios and Karasmanis 1995, p. 62).

This theoretical conception of a necessary distinction between the observable phenomena and their “invisible”, unaltered “essence” is a central feature of Democritus philosophy. He deeply distinguished the “objective and subjective” phenomena and declared that there was a hidden “essence” behind every action since “in reality we know nothing for truth is in the depths” (Diels 1954, fr. 117). He declared that there are two forms of knowledge, one “genuine” and one “obscure”. To the obscure one belong all forms of appearance: sight, hearing, smell, taste and touch. To the genuine knowledge, as Boas (1961, p. 39) correctly observed, Democritus “included an attempt to show the causal relation between reality and appearance”.<sup>23</sup>

It is apparent from the above discussion, that we consider this Democretian concept of the “invisible” and “genuine” knowledge, to be a cardinal epistemological thesis. This idea, possibly influenced the new scientific revolution starting with Galileo, Kepler, etc., who accepted that behind the natural processes there are regularities and laws that can be expressed quantitatively and mathematically. The theory of objective labour-value seems also to have been influenced by it.

## **Conclusion**

This paper argues that Democritus’s thought was important for the development of certain economic ideas which can be found also in the writings of later Greek philosophers. It is, therefore, fair to consider him as an influential Greek philosopher

---

<sup>23</sup> Plato adopted and formulated a very similar approach (*Republic*, 516B, 517C, 523B, 525C, 529B, etc.)

whose works need further study. In this manner, we may conclude that Democritus who, like all other ancient Greek thinkers, developed his economic ideas only as part of his philosophical, political and psychological teachings, is a fine example showing that ancient Greek philosophy could be regarded as a major contribution to the formation of the epistemological presuppositions of Economic Science, making Man the Subject of History and of all Social Process.

## REFERENCES

- Aristotle (1964), *Eudemian Ethics*, Athens: Papiro (in Greek)
- Aristotle (1964), *Nicomachean Ethics*, Athens: Papiro (in Greek)
- Arrow, K. (1962), The Economic Implications of Learning by Doing, *Review of Economic Studies*, June.
- Avtzis, G. (1969), *Democritus of Abdera*, Athens (in Greek)
- Baeck, L.(1994), *The Mediterranean Tradition in Economic Thought*, Routledge, 1994.
- Boas, G. (1961), *Rationalism in Greek Philosophy*, Baltimore, Md: The John Hopkins Press.
- Burnet, J. (1968), *Greek Philosophy: Thales to Plato*, London: Macmillan.
- Diels, H. (1954), *Die Fragmente der Vorsokratiker*, Berlin: Weidmannsche, vol. II.
- Ferreira, R. (2002), Aristotle's Analysis of Bilateral Exchange: An Early Formal Approach to the Bargaining Problem, *European Journal of the History of Economic Thought*, 9, 4, pp. 568-590 (Winter).
- Finley, M.I. (1970), Aristotle and Economic Analysis, *Past and Present*, Vol. 47, May 1970, pp. 3-25.
- Finley, M.I. (1973), *The Ancient Economy*, University of California Press.
- Finley, M.I. (1978), Aristotle and Economic Analysis, in *Studies in Ancient Society*, (ed.) M.I. Finley, London: Routledge and Kegan Paul.

Foley, V. (1974), The Division of Labour in Plato and Smith, *History of Political Economy*, Vol. 6, Duke University Press.

Foley, V. (1975), Smith and the Greeks: a Reply to Professor McNulty's Comments, in: HOPE, Vol. 7, No 3.

Freeman, K. (1946), *The Pre-Socratic Philosophers*, Oxford: Basil Blackwell.

Gomperz, T. (1969), *Greek Thinkers: A History of Ancient Philosophy*, vol. I, London: John Murray.

Gordon, B. (1975), *Economic Analysis Before Adam Smith: Hesiod to Lessius*, Macmillan.

Gray, A. Sir (1980), *The Development of Economic Doctrine: An Introductory Survey*, Longman.

Guthrie, W.K.G. (1965), *A History of Greek Philosophy*, vol. II, Cambridge: Cambridge University Press.

Havelock, E. (1957), *The Liberal Temper in Greek Politics*, New Haven: Yale University Press.

Herodotos (1964), *Histories*, Everyman.

Kanellopoulos, A. (1985), *Economic Thought and Politics of Ancient Greece*, Athens: Karamperopoulos.

Karayiannis, A. (1988), Democritus on Ethics and Economics, *Rivista Internazionale di Scienze Economiche e Commerciali*, vol. 35, no. 4-5, pp. 369-92.

Kirk, G. and Raven, J. (1957), *The Presocratic Philosophers*, Cambridge: Cambridge University Press.

Keynes, J.M. (1931), Essays in Persuasion, *The Collected Writings of J.M. Keynes*, Vol. IX, Macmillan.

Langholm, O. (1979), *Price and Value in the Aristotelian Tradition*, Universitetsforlaget.

Lowry, T.S. (1974), The Archaeology of the Circulation Concept in Economic Theory, *Journal of the History of Ideas*, Vol. 35.

Lowry, T.S. (1979), Recent Literature on Ancient Greek Economic Thought, *Journal of Economic Literature*, vol. 18, 1979, pp.65-86.

Lowry, T.S. (1981), The Roots of Hedonism: an Ancient Analysis of Quantity and Time, *History of Political Economy*, 13:4, Duke University Press.

Lowry, T.S. (1987), *The Archaeology of Economic Ideas*, Durham.

Lowry, T.S. (1998), The Economic and Jurisprudential Ideas of the Ancient Greek: Our Heritage from Hellenic Thought in *Ancient and Medieval Economic Ideas and Concepts of Social Justice*, (ed) S.T. Lowry and B. Gordon, Leiden: Brill.

Marx, K. (1977), *Differenz der Demokritischen und Epikureischen Naturphilosophie*, PhD Dissertation, in: *Marx-Engels-Werke*, Ergänzungsband, Erster Teil, Berlin: Dietz Verlag.

Marx, K. (1990), *Capital*, Vol. I, Penguin Classics, England.

McCarthy, G.E. (1990), (ed.), *Marx and Aristotle: Nineteenth-Century German Social Theory and Classical Antiquity*, Rowman and Littlefield Publishers.

McCarthy, G.E. (1992), *Marx and the Ancients*, Rowman and Littlefield Publishers.

Meikle, S. (1985), *Essentialism in the Thought of Karl Marx*, Duckworth.

Meikle, S. (1995), *Aristotle's Economic Thought*, Clarendon.

Meikle, S. (1991), Aristotle and Exchange Value, in *A Companion to Aristotle's Politics*, (ed.) D. Keyt & F.D. Miller, Jr., London : Blackwell.

Milios, J. and Karasmanis, V. (1995), On the Connection between Ancient Greek Philosophy and Classical Political Economy, *Greek Economic Review*, Vol. 17, No 1, 1995, pp. 51-64.

Mill, J.-S. (1987). "Utilitarianism", in Mill, J.-S. And Bentham, J. *Utilitarianism and other Essays*, London: penguin Classics.

Mullachius, F. G.A. (1883), *Fragmenta Philosophorum Graecorum*, Paris: Fire Didot.

Papadopoulos, Th. (1981), *Democritus: The Philosopher, Naturalist and the Theorist of Democracy*, Athens: Gutenberg (*in Greek*)

Petrochilos, G. (1990), The Hellenic Contribution to Economic Thought, *Global Business and Economics Review*, Vol. 1, Part 2.

Petrochilos, G. (1999), Kalokagathia: The Ethical Basis of Hellenic Political Economy, *Economics Research Papers Series*, Coventry Business School.

Petrochilos, G. (2002), The Ethical Basis of Hellenic Political Economy and its influence from Plato to Ruskin and Sen: Kalokagathia, *History of Political Economy*, 34:3, September.

Plato (1962), *Philebus*, Athens: Papiros (*in Greek*).

Plato (1964), *Laws*, Athens: Papiros (*in Greek*).

Plato (1975), *Protagoras*, Athens: Papiros (*in Greek*).

Plato (1975), *Republic*, Athens: Papiros (*in Greek*).

Polanyi, K. (1957), Aristotle Discovers the Economy, in Polanyi K., Arensberg C.M. and Pearson H.W. (eds.), *Trade and Market in the Early Empires: Economies in History and Theory*, Free Press.

Ricardo, D. (1951), On the Principles of Political Economy and Taxation, in *D. Ricardo Works*, Vol. 1, (ed.) P. Sraffa with the collaboration of M. H. Dobb, Cambridge University Press.

Robbins, L. (1935), *An Essay on the Nature and Significance of Economic Science*, Macmillan.

Robertson, H. and Taylor, W. (1957), Adam Smith's Approach to the Theory of Value, *The Economic Journal*, June.

Roll, E. (1989), *A History of Economic Thought*, London: Faber and Faber.

De Roover, (1974), Scholastic Economics – Survival and Lasting Influence from the Sixteenth Century to Adam Smith, in J.Kirschner (ed.) *Business, Banking and Economic Thought in Late Medieval and Early Modern Europe*, Chicago: Chicago University Press.

Rubin, I.I. (1989), *A History of Economic Thought*, Pluto Press, London.

Russel, B (1975), *History of Western Philosophy*, London: Allen & Unwin [1946].

Sarton, G. (1966), *A History of Science*, Cambridge, Mass.: Harvard University Press.

Schumpeter, J.A. (1954), *History of Economic Analysis*, George Allen & Unwin,

Scott, W. R. (1940), Greek Influence on Adam Smith, in *Etudes Dediees a la Memoire d' Andre M. Andreades*, Athens: Pysos.

Sen, A. (1987), *On ethics and Economics*, Oxford: Blackwell.

Sideris, A.D. (1941), *Xenophon's Economic Thoughts*, Archive of Economic and Social Sciences, 21, pp. 31-51.

Sinclair, T. (1967), *A History of Greek Political Thought*, London: Routledge and Kegan Paul.

Smith, A. (1981), *An Inquiry into the Nature and Causes of the Wealth of Nations*, Indianapolis: Liberty Classics.

Soudek J. (1952), Aristotle's Theory of Exchange. An Inquiry into the Origin of Economic Analysis, in: *Proceedings of the American Philosophical Society*, Vol. 96, No 1, February.

Spiegel, H. (1971), *The Growth of Economic Thought*, Englewood Cliffs, N.J.: Prentice Hall.

Stephen Leslie Sir, (1968), *The English Utilitarians*, vol. 1. *Jeremy Bentham* (1900), New York: A.M. Kelley.

Taylor, W. (1955), Gerschom Carmichael: A Neglected Figure in British Political Economy, *The South African Journal of Economics*, September.

Treuer, A. (1978), *History of Greek Economic Thought*, London: Porcupine Press.

Tzermias, P. (1995), *The Other Byzantium: The Contribution of Constantinople to Europe*, Elliniki Euroekdotiki (*in Greek*).

Voegelin, E. (1957), *Order and History*, vol. II, The World of the Polis, Louisiana: Louisiana State University Press.

Weber, M. (1947), *Grundriss der Sozialökonomik*, 2. Halbband, Tübingen, Verlag von J.C.B. Mohr.

Windelband, W. and Heimsoeth, H. (1980), *Lehrbuch der Geschichte der Philosophie*, Athens: National Bank of Greece.

Xenophon (1956), *Cyropaedia*, Athens: Papiros (*in Greek*).

Xenophon (1956), *Oeconomicus*, Athens: Papiros (*in Greek*).

Zeller, E. (1969), *Outlines of the History of Greek Philosophy*, London: Routledge and Kegan Paul.