

On technological change and stage evolution in the works of Seneca and Adam Smith

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Abstract: The present paper investigates the links that connect Seneca and Adam Smith in relation to the concept of the technological change and the evolution of society. The Roman philosopher and jurist discusses extensively the technical achievements in various factors of production which are an outcome of the division of labour. The main question concerning the fact, if all inventions stem originally from the cogitations of philosophers, or, the common workman is exposed to the manufacturing process in his daily tasks appears also in Adam Smith's thought. The analysis shows Smith's classical roots and the significance of the Roman literature.

Keywords: division of labour, invention, productive process

Introduction

It has been said that Adam Smith analyzed and described the phenomenon of the division of labour (Smith 1976a, p. 17; Smith 1763, pp. 562-581) in the best and most suitable manner; so, it has been justly recognized that the first chapter of the *Wealth of Nations* as "beyond all comparison (is) the most popular chapter in the Wealth of Nations; no part of the work has been often reprinted[...] no part of it is so commonly read by children, or so remembered by them" [1]. Smith owes much of his analysis on Xenophon and Plato. Smith also refers to Sesostris's Law in his *Lectures* of 1766 (Smith 1766, in Smith 1978b, p. 492). This law existed in the Egyptian society (Herodotus, *Histories* II 102-112; Aristotle, *Politics* 1329 b1-6), which feature is the succession of the occupations into the productive process. It is worth noting that Herodotus simply mentions Sesostris in the book *Euterpe* in a different context, whereas the only thing

Aristotle says is that in Egypt as in Crete there was a division in two classes: a military and a farming class (Aristotle, *Politics* 1329b). Smith's analysis of the division of labour recognizes that the technical or internal division of labour leads to (a) increasing dexterity of each worker, (b) in terms of saving of production time, (c) of inventing and introducing innovations that lead to increase of production. These principles are also found in the ancient classical Greek literature (Vivenza 1983, pp. 1573-1595; Eadem 2001, pp. 126-140) and also in Hecataeus's analysis (Hecataeus's *Aigyptiaca* in Diodorus Siculus, *Historical Library* I 74, 3-5) on division of labour [2].

Smith's third principle, the invention of machinery, is approached through an investigation of whether machines are more likely to be invented by the workmen who are daily engaged in the processes involved, or whether educated observers, «philosophers or men of speculation», are possessed of the shrewder innovative insight (Smith 1776[1937], pp. 9-10,15-16). As Rosenberg has pointed out (Rosenberg 1965), this inquiry, rather truncated in the *Wealth of Nations* version, had earlier expanded by Smith into an elaborate theory of how mechanization contributes to productivity. This is particularly true of the version which appears in the *Early Draft* (Scott 1937, 336-338).

Researching the possible background and Smith's roots, one found that a parallel question has been researched by the Roman scholar Seneca. The first section describes Seneca's estimation and attitude of the primitive life, the second section analyzes the significance of the philosopher to the invention and the productive process. Smith's influence from Seneca's arguments and examples is also shown. Smith also describes the philosopher's contribution to the production in a similar way like Seneca (Section 3). The conclusions recapitulate the results of the paper.

Seneca's attitude to the development of civilization

The Roman authors speak of the race of Saturn "Saturnia saecula/regna" - or on a Golden Age – *aurea aetas*, *aureum saeculum/aurea saecula*, *aurem tempus* (Horace, *Epode XVI* 34. Virgil, *Georgics II* 538; Idem, *Aeneid VI* 793-794. Ovid, *Metamorphoses I* 89; XV 96; Idem, *Aetna* 9). Seneca belongs also to this tradition [3]

In his ninetieth epistle, the Stoic philosopher Seneca [4] (4 B. C. –A.D. 65) [5] takes to task the theory of invention of a Stoic philosopher, Posidonius of Apamea (151-35 B.C.), the last Greek scholar of the pre-Christian Antiquity and the most productive, catholic thinker after Aristotle, called Rhodian (see Reinhardt 1954, cols. 563-566). Seneca's discussion of the evolution of the society with Gaius Lucilius Junior, procurator of Sicily, has been developed in the 90th *Epistula moralia* (Seneca, *Epistles XC*. On the part played by philosophy in the progress of man). It may derive in part from the earlier one of Plato (*Laws* 677 B-681B) [6] and Polybius (*Histories* VI 5, 1-9). Seneca's primitivism, both cultural and chronological, is extreme, but it is not unwavering. Most of the usual elements of the eulogy of the state of nature are present, and receive from him their rhetorical elaboration in ancient literature; the emphasis on the physical superiority of primitive men, on the advantages they gained from having no arts, on their communism (*Ep. XC* 10-11) [7]. As he argues: "But no matter how excellent and guileless was the life of the men of that age, they were not wise men[...] I would not deny that they were men of lofty spirit and fresh from the gods[...] They were merciful even to the dumb animals, they searched not in the lowest dregs of the earth for gold, nor yet for silver or transparent stones [...]. It was by reason of their ignorance of things that the men of those days were innocent; and it makes a great deal of difference whether one wills not to sin or has not the knowledge to sin. Justice was unknown to them, unknown prudence, unknown also self-control and bravery; but their rude life possessed certain qualities akin to all these virtues. Virtue is not vouchsafed to a soul unless that soul has been trained and taught, and by unremitting practice brought to perfection. For the attainment of this boon, but not in the possession of it, were we born." (Seneca, *Ep. XC* 44-46) Thus, Seneca describes and praised the idyllic life of the primitive people, and declares that man reaches the ethical perfection only in the civilized life.

In *Epistle 2* of book XIV of his *Epistularum Moralium*, Seneca sets forth his theory of the primitive condition of society in the Golden Age of pristine innocence. In this period of premordial felicity, mankind lived without coercive authority, gladly obeying the wise, and without distinctions of property or caste. His explanation of the course of events that brought about the transition from this primitive stage to modern society is strikingly like that given by J.J. Rousseau in his *Sur l'origine et les fondements de l'inégalité* (= *On the Origin and Foundations of Inequality*) (1754). The main cause for the breakdown of the

primitive arrangements was the origin of private property. The people became dissatisfied with the common ownership, and the resulting lust after wealth and authority rendered necessary the institution of political authority to curb the lusts of man (Rousseau 1754, part II). Seneca lays in *Medea* (Vv. 301-339, 364-379) emphasis chiefly upon the happiness of primeval man in being ignorant of navigation.

The role of the philosopher in the invention and the division of labour

The civilized life can be reached only through the study of philosophy, which leads the man to the technical innovations (Seneca, *Ep. XC* 5-6). Seneca criticizes Posidonius's views concerning the role played by philosophy in the organization and development of the earliest human societies. More specifically, Posidonius believed that it was philosophy that guided the first steps of mankind, since its earliest leaders and teachers were the wise, i.e. the philosophers, of the day. It was they who persuaded people to abandon their caves and start living in communities; who founded the first cities, made the first laws, governed efficiently and justly. Moreover, the same "philosopher-kings" made sundry practical inventions, manufactured useful tools and taught their subjects various arts and crafts (e.g. weaving, building, tilling the land etc.) in order to improve the material conditions of life.

Seneca, who recognizes Posidonius's contribution to philosophy ("He is of the number of those who have contributed most to philosophy" (*Ep. XC* 290)) denies any relationship between philosophers as craftsmen. For him, philosophy stands on a much higher pedestal and its object and mission are far more important. Unlike the arts and crafts, which are concerned with the particulars, philosophy occupies itself with man as a whole, with God, Nature and the World in their totality and interrelation, not with their particular manifestations. Philosophy is the art of living par excellence, and as such it instructs our minds, not our hands, its ultimate goal being to lead us onto self-fulfilment and virtue, and through virtue to happiness. Seneca discusses extensively the technical achievements in various factors in production which are a product of the division of labour. Then, Seneca, describes the technical achievements in the art of weaving (*Ep. XC* 20-21), in the agriculture with the introduction and invention of ploughing (*Ep. XC* 21), in the mill (*Ep. XC* 22), in the invention of

ships (*Ep. XC 24*), in the use of windows "which admit the clear light through transparent tiles" (*Ep. XC 25*) and in the various water constructions (*Ep. XC 15*).

As Foley (1974, p. 230) has pointed out, Seneca's description on the rudder (*Ep. XC 24-25*) appears also in Mandeville's *Fables of the Bees* (1714) [1924], vol. 2, pp. 143-44), who makes a comparison between the philosopher and the artisan. The parallels are much closer between Smith and Seneca [8], since Seneca concentrates chiefly on two devices, grain mills and weaving (*Ep. XC 20; 21-23*). In the first chapter of the *Wealth of Nations* Smith refers several times to the arts which cluster around cloth production, including weaving (Smith 1776[1976], pp. 5-6, 8, 11-12 and Seneca, *Ep. XC 20*). Seneca discussed the plow (Seneca, *Ep. XC 21*) to which Smith refers to several times (Smith, 1762-63 LJ(A) vi 41, p. 346; Idem 1766 LJ(B) vi 53, p. 351). The invention of the grain mill appears also to Seneca (*Ep. XC 2*) and Smith (Smith 1762-63 LJ (A) vi 43, p. 347; Idem 1766 LJ(B) 217, p. 492), the provision of windows in houses (Seneca, *Ep. XC 25*; Smith 1776[1976], p. 12) and the mining (Seneca, *Ep. XC 11-13*; Smith 1762-63 LJ(A) vi 50, p. 349). This analysis may show Smith's classical roots (cf. Vivenza 2001) and the significance of Roman literature, and especially Seneca's contribution to the evolution of economic thought (Baloglou 2009, p. 221).

The contribution of the philosopher to the productive process

Smith gives a description of the establishment of civilized life. One can begin by recalling that considerable attention has been given of late to what Skinner (1965, 1-22) has called the four-stages-theory in eighteenth-century Scottish thought (Kennedy 2008, ch. 4; cf. Aspromourgos 2009, p.392). To recapitulate them briefly, the four stages are as follow. First, man exists in a primitive state, subsisting from the natural and spontaneous fruits of the earth, by hunting or gathering. Next, with the discovery of herding, man comes to live a pastoral life. Third comes the discovery of agriculture, and a more settled society. Last comes the development of an exchange economy, and thus the division of labour (Skinner 1965, pp. 8-15).

Smith gives attention to the distinction between the philosopher and the porter (Skinner, 2001, p. 36). Smith pointed out that: "Among men...the most dissimilar geniuses are of use to one another; the different produces of their respective talents, by the general disposition to truck, barter, and exchange, being brought, as it were, into a common stock, where every man may purchase whatever part of the produce of other men's talents he has occasion for" (Smith 1776[1976], p. 5). Smith noted also that in any developed society there are those "whose trade it is, not to do anything, but to observe everything; and who upon that account, are often capable of combining together the powers of the most distant and dissimilar objects. In the progress of society, philosophy or speculation becomes, like every other employment, the principal and sole trade and occupation of a particular class of citizens. Like every other employment too, it is subdivided into a great number of different branches, each of which affords occupation to a peculiar tribe or class of philosophers; and this subdivision of employment in philosophy, as well as in every other business improves dexterity, and saves time. Each individual becomes more expert in his own particular branch, and more work is done upon the whole, and the quantity of science is improved by it." (Smith 1776[1976], p. 9; Smith 1762-63 LJ (A) vi 43, p. 347; *idem* 1766 LJ(B) p. 570). Lastly, Smith suggested "The difference of natural talents in different men is, in reality, much less than we are aware of; and the very different genius which appears to distinguish men of different professions, when grown up to maturity, is not upon many occasions so much the cause, as the effect of the division of labour. The difference between the most dissimilar character, between a philosopher and a common street porter, for example, seems to arise not so much from nature, as from habit, custom, and education." (Smith, 1776[1976], p. 4)

The main question is: which is more likely, that the machine or any innovation in the productive process is invented by a workman whose daily practice of a trade sharpens his know-how, or by a thinker, a man of academic inclinations who has developed keener powers of observation than others? Smith's answer is the latter. The same question arouses also in the classical age and perhaps derives from the mythical tales based on the concept of the *protos heurètes* (initial discoverer). It was perhaps precisely from Seneca and especially from his ninetieth letter that Smith took this debate [9], but his immediate point of departure here too is different. Seneca's position, with its clearly distinction between the material and spiritual worlds, contrasts with that of Smith, for whom the «specialization» of philosophers in the field of invention is part and

parcel of the division of labour; it is seen in the context of that principle and therefore incorporated into the new category; while intellectual speculation becomes an instrument of progress as conceived in Smith's day, a unitary phenomenon born of both mental and material labour (Vivenza 2001, p. 135).

Conclusion

Posidonius's position, on the other hand, according to which philosophy is the mistress of all the arts and sciences, clearly seems reductive to Seneca, who states that any alert and competent individual will be capable of the invention of working tools and techniques; a process whose advance he inevitably identifies with an unnecessary and thus potentially damaging and corrupting increase in conveniences and facilities. Seneca illustrates his disagreement with Posidonius by recounting in full and varied detail his reluctance to accept that philosophy's role was the humble one of furnishing man with the little conveniences necessary for his life.

Seneca gives a full description of the four-stages-theory of the development of the society and from this point of view he belongs to the Roman tradition of the development of civilization. The Roman scholar emphasizes the role of the philosopher and the study of philosophy for the technical innovations. He gives also a full description of the technical division of labour.

Smith knew this debate, between Seneca and Posidonius, and exploited it in his analysis of the division of labour. In fact Smith cites Seneca in his various works, as it has been demonstrated. It is obvious, because he has also a classical education and proves his classical roots in the analysis of economic phenomena.

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Endnotes

- [1] E. G. Wakefield, editorial note in his edition of *The Wealth of Nations* (1843), I, p.1, quoted in Rashid 1998, p. 14.
- [2] Baloglou 2006, pp. 136-137. In this analytic review on Professor Vivenza's book we are citing the relevant literature, which is dealing with Smith's classical roots.
- [3] See Baloglou and Karayiannis 2009, pp. 216-218.
- [4] His full name is L. Annaeus Seneca. Cf. *De benef.* 4,8,3.
- [5] Préhac 1934; Préhac 1937 considers that Seneca was born in 1 B.C.; Abel 1981 supports the view that Seneca was born in A.D. 1. Cf. Nikolaidis 2002, pp. 28-34. For Seneca's life and thought see Maurach, ed. (1987).
- [6] Plato's *Laws* III 677 B- 681 B compared to Seneca *Ep. XC* 3-6.
- [7] Lovejoy and Boas 1935.
- [8] Smith refers to Seneca to all of his works . Cf. Haakonssen and Skinner, 2001.
- [9] As suggested by Foley 1974, pp. 223-24, pointing to certain similarities between the examples used by Seneca and Smith.

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