

Living in a Material World

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2 The Centrality of Materiality: Economic Theorizing from Xenophon to Home Economics and Beyond

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During the last few years an attempt has been made to look at economic theory from the perspective of performativity. (For an overview as well as an introduction, see MacKenzie et al. 2007.) The basic idea is that, rather than assuming that economists do a fine job in analyzing reality with their sophisticated models and categories, the economic world has been constructed on the basis of economic theory—and it is this that explains why economists are so successful in their analyses. The most important theoretician in performativity theory is Michel Callon, but the two most famous applications have been made by two other social scientists. One is Marie-France Garcia-Parpet, who has shown how a local marketplace for strawberries was physically changed in order to better accommodate the neo-classical theory with its vision of the market as an auction in which a group of buyers meets a group of sellers (Garcia-Parpet [1986] 2007). The second empirical example comes from the work of Donald MacKenzie, and here (MacKenzie 2006) the case consists of a market in options constructed on the basis of the theory for the pricing of options as elaborated by Black, Scholes, and Merton.

At the heart of performativity theory is the notion that economic ideas can materialize, be it into a building (Garcia-Parpet) or into specific forms of behavior of market actors (MacKenzie). While much remains to be done in performativity theory, I will take a different approach to materiality and economic theory in this chapter. My point of departure will be that the natural focus of any economic theory is in many ways materiality, and that this is something that economic theory must take into account if it wants to be able to explain what is going on in the economic realm.

When I say that materiality constitutes the natural focus of economics, I mean that economic life is anchored in materiality: people live in houses, they eat food, they interact with machines, they produce objects, and they use objects. Modern economic analysis, on the other hand, distances itself

from objects and at best acknowledges them in an indirect way, say in the form of measures for poverty, consumption, or economic growth. The modern science of economics is typically presented as a perspective or as an abstract way of looking at reality, rather than as a type of analysis that is concerned with objects or people anchored in material life. Take, for example, Gary Becker's famous definition of economic theory (1976: 5): "The combined assumptions of maximizing behaviour, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach as I see it."¹ Material objects are conspicuously absent from this definition, and in referring to the early definition of economics as a science concerned with wealth Becker writes that "the definition of economics in terms of material goods is the narrowest and the least satisfactory" (ibid.: 4).

From a social science perspective that takes materiality seriously, it is clear that this abstract type of economic analysis is not very satisfying. What is needed is a type of analysis that attempts to theorize the economy in terms of relations, objects, and the interpenetration of objects and human meanings. To construct a novel type of economics along these lines represents a daunting task, and it will not be undertaken here. It is also a task that would have to entail a recasting of the history of economic theory, including an attempt to see what can be salvaged from the past and what cannot.

What I shall try to do in this chapter is instead to make a modest contribution to the task of reinterpreting the history of economic thought, in an effort to better understand what an economics that takes materiality into account might look like. I will mainly be concerned with the way that Western economics started out as a material theory of the household, and with how it then gradually eliminated this focus from its concerns and replaced it with an abstract, non-materialistic theory of the economy centered around a very abstract notion of what constitutes market activities. Eventually, an abstract and non-materialistic theory of the household also emerged. It was known as "new household economics."

In the rest of this chapter I try to capture the main features of this development rather than follow its evolution over the centuries. The chapter is divided into three sections.

In the first section, I present the beginnings of Western economics in ancient Greece. At this stage of history, economic life was firmly centered around the household. Economic theory also began as a theory of the household which was material in nature.

I then move on to the time when economics termed itself political economy (1600s to late 1800s). The two examples I discuss are the works of Adam Smith and Karl Marx. During this period of economic life, an increasing amount of economic activities had begun to take place outside of the household and this was reflected in economic thought. During this stage of economic theory, a concern with the individual household began to disappear, and the element of materiality started to vanish.

In the third section the emphasis is moved to the United States and in particular to Cornell University in the early twentieth century. The reason for singling out Cornell University is that it was there that the fully abstract theory of economics emerged—the theory of *homo economicus*, in the work of Frank Knight. At the same time at Cornell University, interestingly enough, a new type of economics of the household also emerged. This was *home economics*, which was centered around a material vision of the modern household. It has largely been ignored in histories of economic thought.

A note on terminology is in order. Following Max Weber in *Economy and Society*, I will argue that, from a theoretical viewpoint, all economic activities are centered either around households or around profit-making enterprises (Weber 1978: 86–100). Households are essentially oriented toward the needs of their members, while profit-making enterprises attempt to exploit opportunities of gain in order to make a profit. While increasing consumption and wealth represent the goals of households, seizing opportunities and increasing capital represent the goals of profit-making enterprises. Historical examples of households include the individual household of a family, the medieval manor, and the socialist state. Profit-making enterprises include the commenda, the modern firm, and the capitalist economy. Economic reality typically contains a mix of households and profit-making enterprises. (See figure 2.1.)

The Economy as a Material Household in Antiquity

Western economic theory was born in ancient Greece; and the two most important texts on were written by Aristotle (384–322 B.C.) and Xenophon (c. 430–c. 356 B.C.).² Aristotle's analysis of the economy is concentrated in Book I of *Politics*, while Xenophon's text is a full work in its own right, called *Oeconomicus*. As opposed to the works of such people as Adam Smith, John Stuart Mill, and Alfred Marshall, these two texts are rarely read today and have a low status in the history of economics. In this part of his work,

	Householding	Profit making
Short-term goal	Consumption	Seize opportunities for profit
Long-term goal	Wealth	Capital
Form of calculation	Budget	Capital accounting
Institutional expression	Individual household, <i>oikos</i> in Antiquity, manorial economy, socialist economic system	Profit-making enterprise, capitalist economic system

Figure 2.1

Max Weber's distinction between householding and profit making. According to Weber, economic actions and orders fall either into the category of householding (*Haushalt*), the category of profit making (*Erwerben*), or a mixture of both. Source: Weber, *Economy and Society*, pp. 86–100.

Aristotle is typically only remembered for his attack on money-making, and Xenophon for having written a pedestrian treatise on agriculture.

This view of Aristotle and Xenophon misses most of what they actually say on the economy. If one follows their arguments closely instead of trying to cast these two thinkers as predecessors to modern economics, a very different picture emerges. From the perspective of materiality à la Latour, Callon, and Pinch, for example, Aristotle and Xenophon become very interesting since they both explicitly introduce objects into their analyses and discuss how people use them in order to prosper. Xenophon was especially concerned with agriculture: the nature of the soil, how to sow, how to harvest, and so on. Some of the existing technology in ancient Greece, such as tools, are also discussed in the analysis that one can find in Aristotle and Xenophon, as is a deep concern with the human body, including sexuality. The family is of central importance as well, both the relationship between husband and wife and that between parents and children. Knowledge of how to prepare food and of various ways of keeping the house in order were also considered crucial to a good economy. Trade and commerce were held in less high regard.

That the opening chapter of *Politics* is devoted to the economy has to do with the fact that Aristotle viewed economic life as part of the life of the polis. The economy was “embedded” in the rest of society (Polanyi 1971: 81). The goal of the polis was autarchy, or self-sufficiency, which ruled out

extensive commercial contacts with merchants outside the polis. While Xenophon does not say much on the issue of the role of the polis in the economy, it would seem that he agrees with Aristotle on this point. Both had as their ideal a polis that was self-sufficient and in which the citizens were good warriors as well as prosperous in their peacetime activities.

Aristotle's analysis of economic life contains praise for what he terms the art of household management (*oeconomic*), on the one hand, and a sharp condemnation of what he terms the art of acquisition (*chrematistic*), on the other.³ While the former is natural, he says, the latter is unnatural. The reason for this is that the resources of the household come from “plants and animals,” while the latter is “made at the expense of man” (Aristotle 1946: 28). Aristotle's famous distinction between use value and exchange value is also related to his argument about what is natural and unnatural in the economy:

All articles of property have two possible uses. Both of these uses belong to the article as such, but they do not belong to it in the same manner, or to the same extent. The one use is proper and peculiar to the article concerned; the other is not. We may take a shoe as an example. It can both be used for wearing and for exchange. Both of these uses are uses of the shoe as such. (Aristotle 1946: 23)

The art of acquisition, the reader is told, comes from the act of exchange, and its goal is to make money. What is further characteristic of this type of economic activity is that it is infinite in nature; one can never get enough money. What drives economic behavior of this type is “anxiety about livelihood, rather than about well-being,” and this anxiety can never be fully satisfied (Aristotle 1946: 26). The desire to make money also has a tendency to overtake areas of human life that have nothing to do with the economy. One's concern with courage, for example, should be directed at warfare, and not at making money; one's concern with medical knowledge should be used to create health; and so on. “But those of whom we are speaking turn all such capacities into forms of art of acquisition, as though to make money were the one aim and everything else must contribute to that aim.” (ibid.: 27)

The art of the household, as opposed to the art of acquisition, is primarily concerned with the direct use of resources and not with exchange. It has to do with the use of what has been produced; and its importance derives from the fact that “it is impossible to live without means of subsistence” (ibid.: 19). Reproduction is also essential, and it takes place within the household. Ultimately, according to Aristotle, “true wealth” has more to do with “human beings than with inanimate property” (ibid.: 21, 33).

True wealth means a concern with the full and moral development of the citizens of the polis or with "the good conditions of human beings" (ibid.: 34). "The art of household management is a moral art, aiming at the moral goodness of the members of the household," to cite one of Ernest Barker's comments on *Politics* (ibid.: 33).

At the core of the art of the household, according to Aristotle, are three relationships of authority: between the free man and his slaves, between the free man and his wife, and between parents and children. The art of command is crucial to the operations of the household and differs among these three cases. While authority over slaves means command over non-free subjects, this is not the case with command over one's children or wife. Slaves also lack the capacity of deliberation, while women have this faculty to some extent.

The slave is a natural part of the free man's household; "a complete household consists of slaves and freemen" (ibid.: 8). Slaves constitute animate objects, just as oxen and various tame animals. Aristotle infamously states that "just as some are by nature free, so others are by nature slaves and for these latter the condition of slavery is both beneficial and just" (ibid.: 14).

If we now leave Aristotle and turn to Xenophon, it should first of all be noted that *Oeconomicus* is cast in the form of a Socratic dialogue. The knowledge about the economy that one can find in Xenophon's work is, in other words, generated through the questions of Socrates, and we may see this work as an account of Socrates' view of the economy. Most of the volume deals with the household; only a few lines are devoted to the market and the art of acquisition. As opposed to *Politics*, *Oeconomicus* provides a wealth of details, both when it comes to the running a household and when it comes to attending to land. Of great importance to Xenophon's account is further the division of labor between men and women. His fascination with leadership and its role in directing the work of others must also be mentioned. The ethical dimension of economic life is much more complex and fully developed in *Oeconomicus* than in *Politics*. Since Socrates lived before Aristotle, one may well argue that it was Socrates, and not Aristotle, who discovered the economy (Polanyi 1971). As I shall try to show, Socrates' view of the economy is also considerably more interesting than Aristotle's.

The first part of *Oeconomicus* takes the form of a dialogue between Socrates and a wealthy young Athenian named Critobulus. Socrates argues that economics is an art, just as medicine or carpentry, and thus can be taught. What Socrates has in mind is not so much economics as we today under-

stand this topic, but a practical type of knowledge that can be of use in economic life. To Socrates, economics is both a noble and a necessary type of knowledge. The economy, we read in *Oeconomicus*, is as important as war, and is also a useful complement to warfare. The art of war and the art of economics constitute "the noblest and most necessary pursuits" (Xenophon 1923: 399).

The heart of the economy is agriculture, and Socrates sings the praise of husbandry:

The land also stimulates armed protection of the country on the part of the husbandmen, by nourishing her crops in the open for the strongest to take. And what art produces better runners, throwers and jumpers than husbandry? What art rewards the labourer more generously? What art welcomes her follower more gladly, inviting him to come and take whatever he wants? What art entertains strangers more generously? . . . What other art yields more seemly first-fruits for the gods, or gives occasion for more crowded festivals? What art is dearer to servants, or pleasanter to a wife, or more delightful to children, or more agreeable to friends? To me indeed it seems strange, if any free man has come by a possession pleasanter than this, or found out an occupation pleasanter than this or more useful for winning a livelihood? (Xenophon 1923: 400)

In economic affairs one aims to produce a surplus or a balance, and this will come about when what goes out is less than what comes in. Women are typically in charge of what goes out and men of what comes in. "If both do their part well, the estate is increased," and the art of economics teaches how to accomplish precisely this (Xenophon 1923: 389). What often prevents a positive balance from developing are laziness, gluttony, lechery, and the like. Xenophon calls these the "unseen rulers" of men and says that they often destroy their wealth (ibid.: 371).

Wealth, Socrates makes Critobulus realize, does not so much consist of objects as of the way in which these are used. The category of objects is used in a very broad sense by Socrates. One can, for example, increase one's wealth through the use of one's friends as well as through the use of one's enemies. Socrates also argues that although Critobulus owns a hundred times more than Socrates, Critobulus is not as rich. The reasons for this are that many of Critobulus' resources are committed to various obligations and that his overall balance is low. Socrates adds that if Critobulus would ever be in need of money, his friends would not help him out. If Socrates, on the other hand, was in trouble, he would get assistance from his friends.

Socrates states at one point in his dialogue with Critobulus that since he himself has never been rich, he lacks important knowledge in this matter. And when one lacks knowledge, he says, one should consult someone who

has it. It is also important to "watch people" and to carry out "investigations" (Xenophon 1923: 385, 389). While Aristotle seems happy to argue from principles, when it comes to economic matters Socrates is much more open to fresh experience and willing to learn from others.

The rest of *Oeconomicus* contains a dialogue between Socrates and Ischomachus (one of the wealthiest citizens in Athens). This dialogue is the heart of the work. Socrates is first told how Ischomachus has educated and instructed his wife about her tasks inside the house and how these are related to his own tasks, which are located outside the house. The goal of the relationship between husband and wife, Ischomachus says, is to create "a perfect partnership in mutual service" (Xenophon 1923: 419). Ischomachus informs his wife that she was chosen by him and her parents in the hope that she would become "the best partner of [his] home and children" (ibid.: 419).

If the husband or the wife fails in his or her duties, Ischomachus explains, the household will be like a "leaky jar" (ibid.: 427). The long-time goal of both of them is "that their possessions shall be in the best conditions possible, and that as much as possible shall be added to them by fair and honourable means" (ibid.: 419). Children are important, and they will provide for the parents when they are old.

Ischomachus explains in great detail which duties belong to the husband and which belong to the wife. Most of what the husband does takes place on the outside: sowing, plowing, harvesting, and so on. The husband is in charge of production and of the defense of the estate. The wife is responsible for what takes place on the inside; this includes tasks such as storing what has been produced, caring for the children, and being in charge of food and clothing. According to *Oeconomicus*, the minds and the bodies of men and women suit their respective tasks very well. Men are stronger and more courageous than women, who are weaker and more fearful. Both, however, have the same capacity for memory, attention, self-control, and authority.

Another important task of women inside the house is to train and oversee the domestic servants. The emphasis on the importance of the wife's duties led a latter-day commentator on *Oeconomicus* to note that Xenophon is "the first Greek author to give full recognition to the use-value of women's work, and to understand that domestic labour has economic value even if it lacks exchange-value. This idea was radical in the formal literature of classical Greece, and has yet to gain acceptance in modern times." (Pomeroy 1994: 59; see also cf. 36, 87ff.)

Ischomachus also emphasizes the importance of order in the household. It is absolutely crucial, he says, that everything is in its place, so that one can easily find it and so that it does not get wasted. A household, just as an army, must be in order:

How good it is to keep one's stock of utensils in order, and how easy to find a suitable place in a house to put each set in, I have already said. And what a beautiful sight is afforded by boots of all sorts and conditions ranged in rows! How beautiful it is to see cloaks of all sorts and conditions kept separate, or blankets, or brazen vessels, or table furniture! Yes, no serious man will smile when I claim that there is beauty in the order even of pots and pans set out in neat array, however much it may move the laughter of a wit. There is nothing, in short, that does not gain in beauty when set out in order. (Xenophon 1923: 437)

Order also means that the right object is placed in the right room. The most valuable blankets and utensils, for example, belong in the store-room, and the corn in the dry covered rooms. Wine should be placed in the cool room, and art and vessels that need light in the well-lit rooms. If the house has been properly built, the decorated living rooms will be cool in the summer and warm in the winter. The rooms in which male and female slaves sleep should be separated by "a bolted door" so that they cannot breed without permission (Xenophon 1923: 441).

The successful art of the household also includes wise management of the emotional and sexual relationship of husband and wife. As Michel Foucault has argued (1985, 1986), *Oeconomicus* and similar texts exemplify a trend in Greek ethics toward "care of the self," according to which husband and wife have a moral (but unequal) obligation to one another. If the wife carries out her duties well, according to this ethic, the husband should repay this with respect, including sexual respect when she grows old and becomes physically less attractive. The husband should also consider that, while a slave does not have intercourse of free will, a wife may do so if the husband acts well toward her. As the Athenians in his days, Ischomachus was also against the idea that the wife should use makeup. Husband and wife know each other's bodies in great physical detail, so it would be false to present an exterior that does not answer to reality. By performing her household duties, the wife will keep her figure beautiful.

Socrates is very curious in *Oeconomicus* to find out how Ischomachus has become so successful in economic affairs, and he asks him a number of questions on this theme. Ischomachus answers by first describing how he keeps himself in good physical form in order to manage his household and his military duties. He also explains in great detail how an agricultural

estate should be run: how and when to plant, how and when to sow, and so on. An important part of managing an agricultural estate, he emphasizes, has to do with training some slaves to oversee the other slaves. This should be done, according to Ischomachus, by developing virtue and loyalty through rewards. Bailiffs may also get part of the gain. "The power to win willing obedience" is of great importance to Ischomachus, who says that the gift of leadership is "divine" (Xenophon 1923: 525).

While Socrates challenged Critobulus' claim that he was richer than Socrates, it is different with Ischomachus. When the latter is asked "do you really want to be rich and have much, along with much trouble," Socrates receives an answer that he had not expected:

Yes, I do indeed. For I would fain honour the gods without counting the cost, Socrates, help friends in need, and look to it that the city lacks no adornment that my means can supply. (Xenophon 1923: 455)

It is clear that Socrates not only respects Ischomachus' answer, but also that he wants to know how Ischomachus has been able to gather his wealth. Ischomachus continues:

I will tell you what principles I try my best to follow consistently in life. For I seem to realise that, while the gods have made it impossible for men to prosper without knowing and attending to the things they ought to do, to some of the wise and careful they grant prosperity, and to some deny it; and therefore I begin by worshipping the gods, and try to conduct myself in such a way that I may have health and strength in answer to my prayers, the respect of my fellow-citizens, the affection of my friends, safety with honour in war, and wealth increased by honest means. (ibid.: 455)

The only point at which Socrates takes Ischomachus to task and directly challenges his ideas about the successful art of household management is when Ischomachus explains how his father has taught him how to buy, fix up, and sell landed properties. One way to create wealth, Ischomachus explains to Socrates, is to locate good landed properties that are mismanaged, develop them, sell them, and then start the whole process over again. Socrates rejects this way of acting. While he approved of Ischomachus' way of managing his estates, Socrates does not accept the idea of trading estates for profit.

It can be said that the material dimension of economic life was well understood in Antiquity. The body (including sexuality), physical objects, and the soil itself were all included in the art of the household. There is also an emphasis on the interaction of people and objects; and that only by taking this into account can wealth be produced and ensured. This is particularly

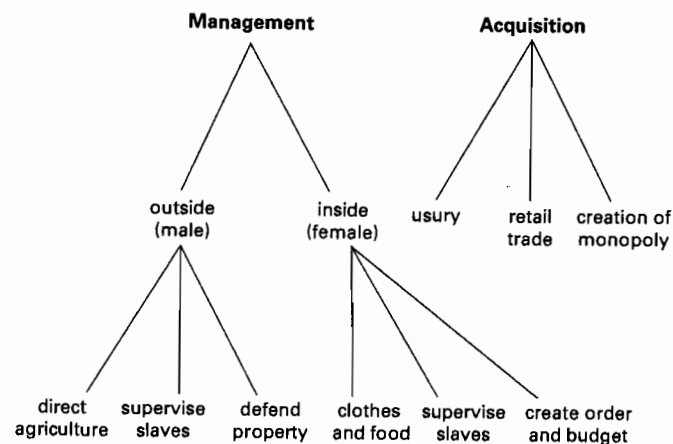


Figure 2.2

The art of the management of the household versus the art of acquisition in ancient Greek thought. In ancient Greece, economic activities were seen as either part of the art of householding or as part of the art of acquisition. Use value was associated with the former and exchange value with the latter. Since Xenophon is the foremost source for the art of householding, his work has been used to present *oeconomic*. Aristotle has similarly been used to portray *chrematistic*, or the art of acquisition. Sources: Aristotle, *Politics* (1948), pp. 1–38, 324–31; Xenophon, *Oeconomicus* (1923).

the case with the analysis of Socrates, as portrayed in *Oeconomicus* by Xenophon. The famous analysis of the economy that can be found in *Politics* by Aristotle is, in contrast, much more concerned with abstract conceptualizations, not only of agriculture and the domestic economy but also of the market. (See figure 2.2.)

Political Economy and Materiality (Adam Smith and Karl Marx)

The two works by Adam Smith and Karl Marx that will be discussed in this section—*The Wealth of Nations* (1776) and *Capital* (1867)—were produced more than 2,000 years after *Politics* by Aristotle and *Oeconomicus* by Xenophon. They were also published during a particularly dramatic and dynamic period in England's economic history, namely the hundred or so years during which the Industrial Revolution took place and England became the world's first truly capitalist nation. *The Wealth of Nations* appeared at the beginning of this period and *Capital* toward its end, but both represent attempts to conceptualize the new economic reality that

confronted their authors. Smith as well as Marx essentially tried to argue that the emphasis in economic analysis had to be shifted away from the household to production and exchange outside the household. Indeed, both Smith and Marx attributed so little importance to the household in the working of the modern economy that for all practical purposes it disappeared from their analyses.

It is clear that one can find much less of a concern with materiality in the works of Smith and Marx than in the Greek classics. The turn toward non-materiality that is characteristic of modern university economics had now begun, even if it is clear that Smith and Marx still tried to anchor their analysis in the human body and also to incorporate material objects and technology into their analyses. To account for the forces that create complex intellectual works such as *The Wealth of Nations* and *Capital* is of course impossible, but it does seem possible to at least single out some of the factors that were involved in this evolution away from the household and materiality. The development in England during 1770–1870 away from an economy centered around the household and use value and toward an economy centered around exchange value and the market was one of the factors that operated against an emphasis on materiality. The reason for this is made clear by Smith as well as by Marx: use value is concrete, while exchange value, which is the only way to coordinate buyer and seller in the market, is abstract (Smith 2000: 31; Marx 1976: 125–26). On the other hand, the fact that both Smith and Marx saw economics in a very practical way—as a guide for the statesman (Smith) and as a tool for the proletariat (Marx)—may have operated against this loss of materiality.

Today *The Wealth of Nations* is often read as an homage to the liberal market economy. The metaphor of the market operating as an invisible hand is typically cited, as well as the fact that the butcher, the brewer, and the baker all do their work because of individual interest and not because they have any particular desire to serve the public interest. It is the mechanism of competition, we are told, that makes the meat of the butcher, the beer of the brewer, and the bread of the baker to be of such high quality. Smith's skepticism against government intervention is also singled out from today's perspective, and so is his argument for free trade.

One may, however, attempt a different reading of Adam Smith, not least if one is interested in the issue of materiality. While it, for example, is clear that the concept of wealth is central to the work of Smith since it appears in its title, it also seems clear that Smith had some difficulty in handling it, and that these difficulties were to have important consequences for the role of materiality in his analysis. On the one hand, as Max Weber reminds us

of, the concept of wealth belongs to the vocabulary of householding (*Haushalt*), as opposed to that of profit-making (*Erwerben*), where the equivalent term is 'capital'. *The Wealth of Nations* does, for example, contain an effort to spell out in physical detail exactly what wealth consists of. On the other hand, Smith was primarily trying to understand and conceptualize the new reality of markets, and this pushed him in a different and much more abstract direction than the one associated with the traditional concept of wealth.

In the spirit of householding, Adam Smith often refers to the fact that the aim of the economy is to produce "the necessaries and conveniences of life." We find, for example, this expression already in the opening sentence of *The Wealth of Nations* (Smith 2000: xxii). At one point Smith also spells out in detail what he means by it. There is first of all different types of food, such as grain, turnips, carrots, cabbages, potatoes, onions, and apples (Smith 2000: 89). There is also the material for clothes, such as linen and woollen cloth, as well as (unspecified) furniture and tools. Finally, what is today considered a necessity, Smith notes, may not always have been one; and this can be exemplified by what is seen as necessary in two different countries (*ibid.*: 938–39). In England, for example, everybody has to have a linen shirt, while this was not the case in ancient Greece and Rome. Similarly, each and every person in England has to have leather shoes, while this is not true in France.

At another point in *The Wealth of Nations*, an attempt is made, again in the spirit of householding, to establish "the stock" of a country (Smith 2000: 302ff.). According to Smith, the stock of a country falls into two categories: what is available for immediate consumption and "capital." The former consists of the necessary conveniences just mentioned, plus houses and other places to live in. The latter consists of two types of capital: fixed and circulating. Fixed capital means machines and buildings to be used for business; circulating capital covers raw material, items that have been produced but not yet sold, and whatever else is in stock.

Everything related to householding, in brief, tends to be concrete and easily specified. What relates to profit-making in the Weberian sense, pulls, however, in the other direction. At one point in *The Wealth of Nations* one can read that "wealth is the power of purchasing" (Smith 2000: 34). Power of purchase, of course, is of interest only if there is something to buy or if what is being produced passes through the market. To this should be added that while labor is what creates wealth, according to Smith, there is productive as well as unproductive labor. Productive labor, we are told, results in a commodity, which is not the case with unproductive labor, as exemplified

by the activities of servants, soldiers, and lawyers. The effect of using labor as a unit of measure therefore means two things, both of which detract from materiality: a homogenization of different types of labor, and that certain types of labor are eliminated from the concept of wealth, namely those that do not result in commodities.

The consequences for economic analysis of equating wealth with commodities that go on the market are very important, especially when it comes to the household. The reason for this is that all that is done inside the home is now eliminated from the analysis, including such activities as ordering things, cleaning the house, making food, budgeting, and caring for the children. While women's work was central to Xenophon's analysis of the aristocratic and slave-owning economy, it has disappeared from the democratic economy of Adam Smith. When women's work is mentioned at all, it is only in connection with manufacturing—that is, with paid work or market work. *The Wealth of Nations* is more than a thousand pages long; the space devoted to the economic role of women takes up only about half a page. If one adds what Smith has to say about the economic role of the home and the family, including children, the half page becomes only a few lines longer.

What is said in *The Wealth of Nations* about agriculture is also of interest in this context since this is the type of economic activity that comes closest to the ancient concept of householding, apart from what goes on inside the house. According to *The Wealth of Nations*, there exist “two different systems of political economy”: “the system of agriculture” and “the system of commerce” or “the modern system” (Smith 2000: 455). Only the latter can bring about true growth in wealth. While *Oeconomicus* by Xenophon contains detailed instructions for how to plant, how to harvest, and so on, in *The Wealth of Nations* one only finds the repeated cliché that “soil and climate” are of much importance (ibid.: 7, 109). As one would expect, Smith also rejects the physiocrats' argument that agriculture is the one and only source of wealth.

While it is often said that *The Wealth of Nations* contains a confrontation between two radically different economic systems (the modern market economy and the mercantilist system), a closer reading shows that Adam Smith confronts what he terms the system of commerce with different types of householding. One of these types of householding, we read in *The Wealth of Nations*, can be found in Antiquity, a period when agriculture was “honored” while commerce and foreign trade were discouraged (Smith 2000: 741ff.). Smith also mentions that according to the Greeks, engaging in manufacturing and crafts would make the male body less suitable for

warfare. The system of slave labor, he notes, was unproductive. Slaves, for example, were discouraged from working hard and never took any initiatives since this was punished.

Not only life in Antiquity, but also in feudalism, as Adam Smith saw it, was based primarily on agriculture and the logic of householding in a way that prevented wealth from growing. As long as the feudal estates did not engage in commerce, everything that was produced had to be consumed on the spot, something that resulted in “servile dependency” among the local population (Smith 2000: 440). Once commerce came into the picture, on the other hand, the feudal lords could sell their surplus, with the result that their subjects grew less dependent on their masters and eventually became free and secure in their own property.

In mercantilism—a version of “the modern system” that Adam Smith criticized with great energy—the nation was cast as a household and the state as the main administrator of this household (e.g. Smith 2000: 273). The central idea was that the nation should increase its wealth, understood as its holdings of precious metals. A series of measures to increase these holdings were typically introduced and policed by the state. Imports of whatever could be produced at home should be discouraged, while domestic manufacturers and exports from these should be encouraged. Colonies were useful, according to the same logic of householding, since one could extract raw materials from these and also use them as markets for manufactured goods.

Adam Smith says over and over again that it makes no sense from the perspective of profit-making to have a mercantilist policy. A country is much better off, for example, if it buys from abroad what it can only be produced at a higher price at home. Money is not the same as wealth; it is a *measure* of wealth. It is also at this point of his argument that Smith gets to introduce what he himself sees as the main force that creates wealth, namely labor under the condition of an advanced division of labor. Being the practical man that he was, Smith becomes quite materialistic when he sings the praise of the division of labor. A few pages into *The Wealth of Nations*, he uses the democratic example of the woollen coat of a worker to show how important the division of labor is:

The woollen coat, for example, which covers the day-labourer, as coarse and rough as it may appear, is the produce of the joint labour of a great multitude of workmen. The shepherd, the sorter of the wool, the wool-comber or carder, the dyer, the scribbler, the spinner, the weaver, the fuller, the dresser, with many others, must all join their different arts in order to complete even this homely production. How many merchants and carriers, besides, must have been employed in transporting

the materials from some of those workmen to others who often live in a very distant part of the country! How much commerce and navigation in particular, how many ship-builders, sailors, sail-makers, rope-makers, must have been employed in order to bring together the different drugs made use of by the dyer, which often come from the remotest corners of the world! (Smith 2000: 12)

In discussing the link between wealth and the division of labor, we also come to the topic of Adam Smith and technology. When he discusses what makes the division of labor so important, Smith sometimes points to its relationship to technology ("machines"); at other times, technology seems to be more of an independent factor (e.g. Smith 2000: 7, 279). Regardless of this, technology, according to Smith, is what allows a person to produce more than he or she otherwise could. That this, however, is not always positive, is also clear from Smith's famous remarks about the pin-making industry. Workers in this type of enterprise soon get in bad physical shape and become, thanks to the division of labor, "as stupid and ignorant as it is possible for a human creature to become" (ibid.: 4-5, 840).

In discussions of Adam Smith and technology (e.g. Koebner 1959) it is often mentioned that there is no awareness whatsoever in *The Wealth of Nations* that England was undergoing the Industrial Revolution at the time the work was written. This is true, and also that references in this work are more to manufactures than to factories. But even if Smith did not understand the importance that modern machinery, such as the Spinning Jenny and the steam engine, would have for the English economy, he nonetheless had a good material sense for technology. This comes out in the following passage, in which Smith discusses division of labor and technology:

What a variety of labour too is necessary in order to produce the tools of the meanest of ... workmen! To say nothing of such complicated machines as the ship of the sailor, the mill of the fuller, or even the loom of the weaver, let us consider only what a variety of labour is requisite in order to form that very simple machine, the shears with which the shepherd clips the wool. The miner, the builder of the furnace for smelting the ore, the feller of the timber, the burner of the charcoal to be made use of in the smelting-house, the brick-maker, the brick-layer, the workmen who attend the furnace, the mill-wright, the forger, the smith, must all of them join their different arts to produce them. (Smith 2000: 12)

How machines, raw material, and labor meld into each other and become a product also comes out very nicely in some passages in *The Wealth of Nations*, such as the following:

A piece of fine cloth, for example, which weighs only eighty pounds, contains in it, the price, not only of eighty pounds weight of wool, but sometimes of several thou-

sand weight of corn, the maintenance of the different working people, and of their immediate employers. (ibid.: 437)

When one moves from the analysis in *The Wealth of Nations* to that of *Capital*, a different picture of the economy emerges. This is not surprising: Smith, in the terminology of Marx, was addressing issues relating to the manufacturing period (c. 1550-c. 1775), while Marx was concerned with the period of large-scale industry. And while Smith battled the semi-capitalist, semi-feudal economic system that he famously termed 'mercantilism', Marx had a different target. From the very first lines of *Capital*, it is clear that Marx analyzed a world where production for the market had replaced production in the household:

The wealth of societies in which the capitalist mode of production prevails appears as an "immense collection of commodities"; the individual commodity appears as its elementary form. Our investigation therefore starts with the analysis of the commodity. (Marx 1974: 125)

Everything in capitalism, according to Marx, is drawn into the need for ever more profit: "Accumulate! Accumulate!" (Marx 1974: 742) This emphasis on accumulation also tends to shift the focus of the analysis away from materiality since what constitutes exchange value, for Marx as well as for Smith, is "abstract human labor" (e.g. ibid.: 142). Prices are based on labor, something that becomes possible only if all types of labor are seen as fundamentally alike in some respect. While this is true, Marx's analysis nonetheless succeeds in avoiding the worst dangers of being too abstract and non-materialistic. One reason for this is that Marx sees production as much more important than the market, something which has to do with the role that he assigns to surplus value in his analysis. What capitalists fight about is not profit generated in the market through the act of exchange, say by buying cheaply and selling expensively, but surplus value generated through production by the workers in the factory. To look only at the prices of commodities and compare these to one another, Marx says, is to mystify what goes on in the economy. Prices express relations between people and not between objects ("fetishism of commodities"; Marx 1974: 164-165).

That Marx's analysis of capitalism pulls in a materialist direction has also another and very obvious explanation, namely that Marx had been a materialist since early on. As a young and radical Hegelian, it was precisely the abstract and non-materialistic quality of Hegel's thought that he rebelled against. The well-known expression "der Mensch ist was er isst" ("you are what you eat") had been coined by another Hegelian, Ludwig Feuerbach.

And in Marx's attempt to go beyond Feuerbach's type of materialism in his "Theses on Feuerbach" we find an argument for a "new materialism" (Marx 1978: 145). The new materialism, as opposed to "the old materialism," understands for example that there also exist material reasons why people think in non-material or religious terms. People suffer for a number of very material reasons—and having a God alleviates their suffering.

Attention to the physical world, including the human body, is characteristic of all of Marx's writings. In *Capital*, the human body is discussed in primarily two contexts. There is first of all a need in capitalism to reproduce the body of the worker. Secondly, the body of the worker is severely abused in this type of economic system. The need to reproduce the body of the worker comes from the fact that labor is the only commodity that can produce surplus value, and to pay for this commodity means to pay for its physical reproduction. Or, to cite *Capital*:

If the owner of labour-power works today, tomorrow he must again be able to repeat the same process in the same conditions as regards health and strength. His means of subsistence must therefore be sufficient to maintain him in his normal state as a working individual. His natural needs, such as food, clothing, fuel and housing vary according to the climatic and other physical peculiarities of his country. (Marx 1974: 275)

Marx's concern with the body of the workers can also be seen in his attempt to assess how many calories a worker needs per day, as measured in the terminology of the time: "nutrative elements," consisting of "carbon" and "nitrogen" (Marx 1974: 808 ff.). He notes in addition that since workers one day will die and have to be replaced, the price of labor (= the price for the reproduction of a worker) must also include the cost of his children. "The labour-power withdrawn from the market by wear and tear, and by death, must be continually replaced by, at the very least, an equal amount of fresh labour-power." (ibid.)

In their eagerness to make a profit, Marx argues, the capitalists typically exploit the workers and hurt them physically and psychologically:

In its blind and measureless drive, its insatiable appetite for surplus labour, capital oversteps not only the moral but even the merely physical limits of the working day. It usurps the time for growth, development and healthy maintenance of the body. It steals the time required for the consumption of fresh air and sunlight. It haggles over the meal-times, where possible incorporating them into the production process, so that food is added to the worker as a mere means of production, as coal is supplied to the boiler, and grease and oil to the machinery. It reduces the sound sleep needed for the restoration, renewal and refreshment of the vital forces to the

exact amount of torpor essential to the revival of an absolutely exhausted organism. (Marx 1974: 375–376)

Despite his sensitivity to the material dimension of labor, Marx—just as Adam Smith—eliminated everything that happens in the home or the household from his analysis of the economy, including the domestic work of women. The importance of this last type of work at the time of Marx has been well established in scholarship (e.g. Tilly and Scott 1978; see Folbre 1991 for a discussion of the absence of domestic work from economic thought in the 1800s). Women (and children) are mentioned in *Capital* only when they enter the labor market, something which they did when large-scale industry was introduced in England. In brief, Marx ignored the household.

One can on the other hand find a significant attempt in *Capital* to introduce science and technology into the analysis of the economy (cf. MacKenzie 1996). Technology is conceptualized as the practical application of science (e.g. Marx 1974: 775, 929). Science and technology, the reader is told, also set man apart from animals since human beings can think about the different ways in which they interact with nature *before* they do so. They also use instruments that they have constructed, when doing so. While human beings have made instruments throughout history, in order to accomplish various tasks, the role of these instruments changes dramatically with capitalism. From now on, human beings have to adjust to their instruments rather than the other way around. Man becomes, as Marx puts it, a "living appendage to the machine" (ibid.: 548). The workers also need little skill to run the machines that are now being used; they become de-skilled.

The main reason for this situation is not so much technology or science *per se*, according to Marx, but capitalism and the fact that the workers have nothing to do with the decision of what is to be produced. The person who does the conceptualization is the capitalist, and the reason for his interest in science and technology and to decide on what is being produced, has primarily to do with the profit motive. The way to beat your competitors is by being able to lower the price, and this can be accomplished through the introduction of new machines. "The battle of competition is fought by the cheapening of commodities" (Marx 1974: 777). This is why science has to be "pressed . . . into the service of capital" (ibid.: 482). And the introduction of science and technology into a type of economic system that has ever more profit as its goal, means that the technology—and people working with this technology—will always be in a process of change:

Modern industry never views or treats the existing form of a production process as the definitive one. Its technical basis is therefore revolutionary, whereas all earlier modes of production were essentially conservative. By means of machinery, chemical processes and other methods, it is continually transforming not only the technical basis of production but also the functions of the worker and the social combinations of the labour process. At the same time, it thereby also revolutionizes the division of labour within society, and incessantly throws masses of capital and of workers from one branch of production to another. (ibid.: 617)

To summarize my section on political economy: It is clear that compared to Xenophon and Aristotle, the household has disappeared and so has some of the materiality of early economic analysis. There is, for example, no concern in the works of Smith and Marx with women's work in the household, the task of bringing up children, and the sexual relationship between husband and wife. Materiality is still present in both Smith and Marx, but there are also clear signs that it is on its way out. This is especially clear when it comes to the discussion of the market, exchange value (price) and labor (abstract labor).

There is also the fact that, while the actors in the works of Smith and Marx still live in a material world, the material dimension is little theorized and mainly taken for granted. While this may be a weakness from the perspective of the new materiality of Science and Technology Studies, it is nonetheless easy to feel nostalgia for the high days of political economy. Why this is the case should become obvious in the next section of this chapter which is devoted to the phase of economics in which it cut its very last links to materiality and became a highly abstract science.

The Immateriality of *Homo economicus* and the Materiality of Home Economics

In presenting the art of household management I have looked at ancient Greece, and in presenting political economy, nineteenth century England. In now turning to *homo economicus*, the main focus will shift to the United States in the twentieth century. This change of scenery to the United States also reflects the fact that mainstream economics has developed the most forcefully in this country since the early twentieth century, just as political economy came to its classical expression in England during the 1800s. I shall in particular turn the spotlight on Cornell University around 1900, because of two very interesting developments that took place there. First, this is where the theory of *homo economicus* came to its classical expression, in the doctoral dissertation of Frank Knight. And second, around the same

time Cornell University also helped to create a type of economics that is usually ignored in the histories of economic thought, but which is very important for the concerns of this chapter, namely a material theory of the household that went under the name of home economics.

Let us start out by taking a look at what according to Kenneth Arrow constitutes the pioneer formulation of *homo economicus*, namely the section devoted to this topic in *Risk, Uncertainty and Profit* by Frank Knight (Arrow 1987: 203; Knight 1979: 76–81). Knight's book was published in New York in 1921 and is based on his dissertation in the Department of Economics at Cornell University (Knight 1916). According to Knight and Arrow, the discussion of the theory of *homo economicus* in *Risk, Uncertainty and Profit* only makes explicit what is already present in "a large part of the economic literature" (Knight 1971: 81). It is usually agreed that it was John Stuart Mill who make the first attempt to introduce the idea of *homo economicus* in the mid-nineteenth century, so one can perhaps phrase it so that Knight in his dissertation gave voice to ideas on this theme that had developed in mainstream economics over something like half a century (e.g. Persky 1995).

Knight prefaces his presentation of the nine central assumptions of *homo economicus* with a statement which can also be found in John Stuart Mill and several other economists, namely that assumptions of this type are made exclusively for methodological reasons. They are "heroic abstractions" and they refer to an "imaginary society," but they are also essential since they make it possible to solve certain problems (Knight 1971: 76). The nine assumptions that Knight discusses in *Risk, Uncertainty and Profit* are the following (ibid.: 76–81). Economic actors are "normal human beings" of the type found in "a modern Western nation" (#1). They act "with 'complete rationality'," something which means that they know what they want, how to get what they want, and also what consequences their acts will have (#2). Economic actors decide themselves what they want, and there are no constraints on their actions in this regard (#3). Nothing can stop the economic actors from carrying out their economic plans, be it physical obstacles or anything else (#4). Perfect competition means, among other things, "perfect ... intercommunication" and that all goods can be divided indefinitely (#5). Economic actors have no social relations with other economic actors, except in the act of exchange (#6). Economic actors only acquire goods through the market and production (#7). Division of labor presupposes a diversification of wants and a specialization of the productive capacity of the individual; resources are unevenly distributed in the world and there is a limit to human mobility (#8). And finally,

conditions have to be static, something which means that economic actors can now understand everything about their conduct that they have not already understood (#9).

While Knight does not explicitly state that *homo economicus* can be found only in the market, this is nonetheless the case. The household, in other words, has totally disappeared; and so has all materiality. As to the human body of his economic actors, Knight only makes a few cryptic remarks. People, he says, have "inherited and acquired dispositions"; they also have "wants" (e.g. Knight 1971: 76, 79). But no references beyond this are made to emotions and sexuality, and we do not know if the actors are male or female, old or young, have legs and arms, and so on. Since communication between the actors is assumed to be perfect, language is also eliminated from the analysis.

Knight has even less to say about technology than about the body in his attempt to present the main assumptions of economic analysis. At one point he notes that "material implements of production may be used provided they are either superabundant, and consequently free goods, or else are absolutely joined to their owners (not subject to lease or sale)" (Knight 1971: 80). Knight also refers to the assumption that material implements have to be stable (cf. #9). A very abstract type of technology, in brief, is assumed to be present and it cannot change.

Also the physical and geographic environment leads at best a ghostlike existence in Knight's account of *homo economicus*. The only explicit reference to the environment is to be found in his discussion of assumption #8, where Knight speaks of "the space distribution of the different resources of the earth and the limitations on human mobility" (Knight 1971: 79). The reason for mentioning these two factors is probably related to the state of foreign trade theory at the time when Knight wrote his book.

Finally, material objects are strangely missing from Knight's analysis, despite occasional references to "goods." To some extent this may be related to the disappearance of the term use-value from the vocabulary of modern economics, and the related attempt to replace it with a more subjective terminology, such as "utility" and "preferences." What also makes objects disappear from the analysis is Knight's steady focus on the market at the expense of everything else in economic life, something which means that even though he is aware of the importance of production, whatever happens when goods come into being is ultimately less important than how they are priced—and this takes place in the market. A related example of Knight's attitude to objects is his statement that "we also must assume complete absence of physical obstacles" when it comes to the actor making

a decision, and that we have to assume "perfect mobility" and "no cost involved in movements or changes" (Knight 1971: 77). When Marx famously said that "all that is solid melts into air," he was thinking of the corrosive impact of bourgeois conditions on feudal values, but his statement also fits the transition from political economy to modern economic theory when it comes to materiality (Marx 1978: 476).

After this discussion of *homo economicus* in its Knightian formulation, I shall proceed to a type of economics that was very strong at Cornell University at the time when Knight presented his dissertation. This is *home economics*, which can be described as the exact opposite in many respects of the theory of *homo economicus*. Where one is abstract and non-materialistic, the other is concrete and materialistic. And while the theory of *homo economicus* has usually been taken very seriously and discussed at great length, home economics has typically been ridiculed and ignored. When male students at Cornell and other universities were gently steered in the direction of economics, the female students were just as gently steered—in the direction of home economics.

The origin of home economics is usually traced to the early 1800s, with Catherine Beecher's *Treatise on Domestic Economy* (1842) as an important landmark. The focus in this type of economics was primarily on the home and skills such as cooking, cleaning and sewing. A few decades later efforts were made to turn home economics into a university subject, something that succeeded in the United States but in no other country, to the best of my knowledge. The reason for home economics being so successful in the United States probably has to do with the fact that this country had a relatively young and flexible university system. Not all the universities, however, accepted the new subject. While the prestigious private universities for women, for example, rejected it, many land-grant universities accepted it. Universities such as Cornell and Wisconsin, where home economics prospered, also had close ties to the government and to the local community. They were also more open to political reforms.

In 1909 the American Home Economics Association was created and a decision made to settle on the term "home economics," as opposed to "household arts," "domestic science," "oecology," and similar terms (e.g. Stage and Vincenti 1997). Home economics received considerable support from the federal government, especially through the Smith-Lever Act of 1914, which allotted funds to improve US agriculture. After a shaky and difficult beginning, the home economics movement reached its peak in the 1910s and the 1920s. Decline began to set in after World War II, and it died a slow death a few decades later. It is often noted that an important

reason for its disappearance was that home economics was out of touch with the times by the 1960s and the 1970s, in the sense that gender roles were now very different from what they had been around 1900. Women had in particular begun to move into the labor market, something that made many of the basic assumptions and concerns of home economics less relevant. Home economics was also severely criticized during the 1960s and the 1970s by major figures in the feminist movement.

The development at Cornell, where home economics was a great success, can be used to illustrate the rise and decline of home economics (e.g. Rose 1969; Berlage 1998). In 1907 a Department of Home Economics was created at Cornell that was part of the College of Agriculture, and a very successful degree program for female students was instituted. The Department was popular even if its faculty members were ridiculed and called "cooks" by their male colleagues. In 1925 the Department of Home Economics became its own College with a number of departments, such as the Department of Food and Nutrition, the Department of Economics of the Household and Household Management, the Department of Family Life, the Department of Textiles and Clothing, the Department of Household Art, the Department of Hotel Administration, and the Department of Institution Management. The next few decades were very successful, and more than a hundred doctorates in home economics awarded. By the 1960s, however, times were different, and in 1969 the College of Home Economics was reorganized and had its name changed to the College of Human Ecology.

Home economics has primarily been studied from the perspectives of gender and profession, and it is clear that quite a bit can be said about it from these perspectives. Home economics failed as a profession, and this had much to do with gender relations at the time. But home economics can also be seen as a part of the history of economics and as part of a tradition that goes all the way back to the science of household management in ancient Greece (*oeconomic*). It can be argued that it is precisely from this perspective that home economics makes most sense: as a return of a part of the science of economics that had been rejected and ignored at least since the days of Adam Smith. That home economics also fits nicely into the history of economics as a science about people and their materiality is similarly clear.

That this view is not so dissimilar from the way that the leaders of the home economics movement themselves saw what they were doing, can be illustrated by the following quote from an article in the *Journal of Home Economics* from 1911 by Ellen Richards:

Home Economics means . . . economics in its original significance, household administration, domestic management. Political economists have usurped the word to mean *production* of wealth. In early times this was largely done within the domain of the household, but with the taking away of the producing interest through the rise of factory products, a gap was left in the carrying out of this theory, only now beginning to be filled by the new science, the economics of consumption. More than this, the civilization of the past has been developed, we believe, through the family home, the bond of mutual interest between parent and child, grandparent and grandchild, brother and sister, which makes cooperation under one roof possible. (Richards 1911: 117)

The type of home economics that existed in the 1800s can be described as practical knowledge about various tasks in and around the home, especially skills in cooking and sewing. Around the turn of the twentieth century, when women in the United States were for the first time being admitted into the university, an attempt was made to set home economics on a scientific footing and thereby make it stronger as well as legitimate. This was especially the case with the topics of food and cleaning. Chemistry was used to bolster the former, and the science of sanitation the latter. The results were impressive: advancement toward a scientific understanding of nutrition as well as a considerably better understanding of some issues related to hygiene and public health. In their work on public health and sanitation the home economists sometimes took the model of the household and extended it to the level of the community, going well beyond a concern with the individual home.

The 1920s and the 1930s added the family as a central topic, including the development of children and parental education. An effort was now made, for example, to show that boys and girls were not inherently different and made for different tasks in society. The interest among home economists for technology was also intensified during the course of the twentieth century, both at the level of the home and at the level of the community. The introduction of science and technology into the kitchen constituted an important item on the agenda of home economics, and the bringing of electricity to the countryside and the family farm another. In all of these efforts, the practitioners of home economics displayed a deep and sincere interest for the practical and material aspects of people's everyday life that is unique in economics.

When one looks at the role that the theories of *homo economicus* and home economics played in university education in the early 1900s, it becomes clear that the young male students were trained in an abstract, impractical and very prestigious type of knowledge, while the young female

students were trained in a concrete, practical and often ridiculed type of knowledge. The end of the story adds a further twist: home economics with its interest for the household was by the 1960s seen as outmoded and made to disappear, while mainstream economics, as a sign of its continued vitality, now took on the study of the household. "The new household economics," as it became called, developed precisely around this time, and it extended abstraction, impracticality, and non-materiality to the last stronghold of what had once been called *oeconomic*.

Concluding Remarks

By now it should be clear from what has been said in this chapter that there is more to the texts from ancient Greece on economics and the literature that makes up home economics than has generally been realized. Both of these sources allow us to follow an important theme in the history of economics, namely the evolution of the analysis of the household. What originally constituted the core of economic analysis, later disappeared from mainstream economics—and today lives on under the name of new household economics.

Xenophon, Aristotle, and the authors of home economics also allow us to get a glimpse of what a truly material analysis of economics might look like. The estate of ancient Greece encompassed many activities that cannot be found in the individual household in the United States in the late 1800s and the early 1900s and vice versa, so together these two sources span a broad range of economic activities. A comparison of this type of analysis with that of new household economics could also be interesting in that it could show us the advantages and disadvantages with a material analysis of economic phenomena.

Many economic activities in the modern world clearly take place outside the household, and for a full theory of material economics one would like to see also these analyzed from the perspective of Latour et al. (See figure 2.3.) Advocates of the new materiality have developed a series of concepts and ideas that may come in handy in an enterprise of this kind; some of their analyses also touch on economic phenomena. One can, for example, reread Bijkjer and Pinch's 1987 article on the evolution of the bicycle and Callon's 1987 essay on the attempt to develop an electrically driven automobile in France in the 1970s from this perspective. Concepts such as "actant" and "collective" and the idea that networks involve not only human actors but also objects have as well to be applied to economic phenomena in order to test their analytical strength. And so should Trevor

	Market activities	Non-market activities
Non-material approach	Mainstream economic theory	New household economics
Material approach	?	<i>Oeconomic</i> , home economics

Figure 2.3

Market and non-market activities.

Pinch's notion that institutions have a material dimension (Pinch 2008). Bruno Latour's forthcoming exploration of Gabriel Tarde's work on the economy will probably provide some answers that are relevant in this context as well (Latour 2008).

Some attempts to use the materialistic approach to analyze economic phenomena, looking especially at the role of technology, already exist. This is especially true for analyses that focus on the market mechanism, which by economic sociologists is usually seen exclusively in social terms ("markets as social structures") and by economists in terms of demand and supply ("the market as a price mechanism"). The way a market operates, however, is also dependent on the role of technology. The ticker, as Alex Preda shows in this volume, will deliver information that is crucial for the formation of market prices that differs from, say, the modern computer. The same is true for the use of telephones in a market, as we know from the work of Fabian Muniesa (this volume). Social technologies, say in the form of the pricing of options, may operate in a similar way (MacKenzie and Milo 2003; MacKenzie 2006).

While a material approach has been developed to analyze the market mechanism, very little has been done in the areas of production and consumption. Both of these are organized somewhat differently in economies where much of the production goes through the market (capitalism), and in economies that primarily draw on the state or some other social agency for distribution (socialism, early economies). Competition and private property clearly lead to certain forms of organization and interactions that differ from, say, socialist, mercantilist, or pre-industrial economies. One would therefore expect that capitalism also has its very own form of materiality. But this may be true only to a certain extent, and it is important to point out that today's emphasis on the role of the market tends to overplay the differences between capitalist and non-capitalist type of economies. To

this should also be added the fact that any type of capitalist economy will have pockets of household economies and that these are imperative to its general functioning. The more general point that I am leading up to, and on which I would like to end, takes us back to the main theme of this chapter, namely that a better understanding of materiality is essential in order to properly understand economic life.

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Notes

1. While the tendency of producing a highly abstract type of economics has its roots in the second half of the nineteenth century, abstract definitions of economic theory are usually dated the 1930s and especially to Lord Robbins's *Essay on the Nature and Significance of Economic Science* (1932; see e.g. Kirzner 1976: 108–45).
2. Other writers on the economy include Protagoras, Antisthenes, and the real authors of *Oeconomica*, which is conventionally ascribed to Aristotle (see e.g. Pomeroy 1994: 7–8, Aristotle 1935). For an introduction to Greek economic thought, see Trever 1916.
3. According to M. I. Finley (1973: 17), "the word 'economics', Greek in origin, is compounded from *oikos*, a household, and the semantically complex root, *nomos*, here in its sense of 'regulate, administer, organize.'" There is no single word in English that can adequately capture *oikos*, according to Pomeroy (1994: 41), who also notes that the *oikos* constituted the foundation of the Greek economy.

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