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Human Capital. Theory and Evidence in Light of Socio-Economic Structuralism

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ABSTRACT

In the era of mass currency pertaining to the Bourdesian concepts of cultural and social capital, the latter given in somewhat different renderings by a plethora of other authors, such as Putnam, Coleman and so on it is easy to forget what the true 'founding father', or 'mother', if you like of the entire 'capital' family was. Furthermore, the notion concerned, owing to its association to the economic, and in particular managerial practice and corporate governance, could be said to possess even greater importance than the two varieties of the supreme category mentioned above, all their -real or ostensible charm, apparently so attractive to the practitioners of the humanities and social sciences notwithstanding. However, the patience of the reader is kindly requested; the concept concerned will be tackled head-on in Part II of the present book while in the brief Part I the underlying theoretical and conceptual framework that shall be deployed in that analysis needs to be illuminated. And you know what? As opposed to some other authors who in similar circumstances tell the reader that she can, if she wants, skip this (purportedly hard to swallow and boring) theoretical considerations and skip to the core of the matter, which in this book is placed in Part II; as distinct thus to the majority of writers, the reader is not advised by the present author to skip the theoretical section, since absent these considerations, she is bound to have some difficulties in understanding or understanding in full the material in the remaining parts of the current work. Finally, being frank by default, so to speak, the undersigned must confess that there are certain more personal motivations behind the aforementioned recommendation, too; after all, parents worldwide commonly boast about their offspring and precisely such a relationship obtains between the current intellectual producer and the principal theoretical core of what is being put forward below.

Keywords: human capital, human capital and economic growth, human capital theory and policy, legal vs. economic ownership, managerial ownership, measurement of human capital, ownership, ownership of labour power, private returns of human capital, social returns to human capital

PART I. OWNERSHIP

In contrast to capital, another key economic concept is rather neglected by the modern practitioners of social science.

Swedberg (2003:203) observes that “property has not been much studied by sociologists. Property rights are discussed by some, [...] and they figure into class analysis, comparative capitalisms, but they have not received an encompassing sociological treatment.

By contrast, economists have long been interested in property rights. Sociology’s neglect is unfortunate, for the founders of sociology knew that property rights have great sociological relevance [...] The most obvious connection, Marx recognised, is with social stratification. Ownership constitutes one of the most enduring dimensions of inequality. Property in modern societies is maintained by the legal system, and so directly implicates law and the state, but informal property rights emerge as practices decouple from formal institutions. Many instances of dramatic political change involved shifts in property rights (e.g., the Russian and French Revolutions). In addition, to exchange property rights is the elemental market transaction”. An important reason for the above-mentioned gap is the widespread treatment of property as a legal relation.

I. 1. LEGAL VS. ECONOMIC OWNERSHIP

Let us, therefore, enumerate more systematically at least some of the reasons for the inadequacy of this more common legal approach. This criticism towards not so much jurisprudential theory of property as such (which, of course, retains its relevance within its proper domain) as its indiscriminate use in positive or empirically grounded, as opposed to normative or dogmatic, realms of discourse lies at the heart of all the socio-economic analyses worthy their name. By the same token the scholars who subscribe to, as well as draw on the intellectual tradition represented by Karl Marx, Max Weber, Eugen von Böhm-Bawerk and other members of the Austrian school of political economy, who all have in common a tendency to distrust overgeneralized or reified concepts and to step beyond formalistic fetishized legal notions to those relations that form the economic and social background of law.

One example suffices to indicate how much those comments are necessary. In “The Economic Sociology Bulletin” an author of a special essay devoted to property has no doubts whatsoever that it is “the legal category of property [that] supplies a semantic form that enables individuals and groups to form expectations concerning the extent to which they can take and retain possession, use, consume, and profit from things (Ford 2009:15- emphasis: J. T.)”.

As has been implied above, ownership has a dual mode of existence, so to speak; economic ownership (to be defined later) is to be distinguished from legal ownership, which belongs to what Marxists call the superstructure, as opposed to the economic base of society. While the law generally sanctions the economic relations of ownership, the latter rarely correspond to the prevailing legal forms. Public or state ownership has varying economic and sociological contents or meanings depending on its concrete historical context. Compare, for instance, the ancient East, where the state, personified by the king, was the owner of immense land property, artisans’ workshops etc. with the modern West with its often quite high degree of public ownership, or with the ‘socialist’ nations of Eastern Europe, where government ownership was dominant. On the other hand, one and the same economic relation of ownership may find its expression in diverse legal forms. For instance, legal arrangements concerning property

in land differed greatly in the former Soviet Union, Czechoslovakia and Eastern Germany, yet real economic relations of ownership were very similar in all those countries., Furthermore, many legal concepts operate at too high a level of abstraction to be suitable for economic (and sociological) analysis. This applies, among others, to the crucial concept of the „corporation”. The emergence of the joint-stock company as a major method of business organisation involves legal recognition of the corporation itself as the owner of its assets. But economic ownership can be an attribute of only private or „natural”, as opposed to legal, persons (or their groups).

To recognise a corporation as the owner of its capital does not answer any of the following questions- which are relevant for economic or sociological analysis. Does the corporation belong to the body of shareholders as a whole or a portion of them?

What is the corporation’s managers’ ownership status?

Is economic ownership wielded by the company’s employees as well? Does the concept of indirect ownership through employee pension funds apply here? What is the extent of foreign ownership? Etc., etc. Standard jurisprudential thought fails to penetrate beneath this „corporate veil”.

It is not only with respect to the subject of ownership that the type of analysis under consideration is found wanting. The same applies to its object. Property can be not only in physical „things” such as machines or land, or in incorporeal or intangible objects such as patents, but also in a given individual’s labour power or, in Max Weber’s terms, Arbeitsqualifikationen. More generally, there are many economic property relations that are not taken account of by the law. To own some object is not necessarily to have a legal title to it. The legal approach to Property by focusing on the holder of a legal document containing provisions enforceable through the courts disregards, among other things, a host of illegal relations composing the informal or hidden economy. Putting it another way, economic relations of ownership can rest not only on legal provisions but also on informal agreements, social customs or conventions, etc.

What lies at the heart of the socio-economic theory of ownership laid out here is that the benefits inherent in the ownership of the factors of economic activity always are, to a lesser or larger extent, gratuitous. The adjective ‘gratuitous’ derives from the Latin word *gratuitus*, meaning free, freely given, spontaneous. It is precisely for that reason that, referring to the economic notion of rent as an unearned income, our whole approach to property may be termed a rent-based one.¹

It is in these terms that Marx proceeds in “Capital” (vol. I, ch. 7), using a number of examples from modern capitalism, albeit it has to be stressed that the basic nature of economic ownership is universal, i.e. present in other economic formations of society as well. This is, incidentally, emphasised by Marx in, amongst others, the following statement (Capital, vol. I, ch. 9)

The soil (and this, economically speaking, includes water) in the virgin state in which it supplies man with necessities or the means of subsistence ready to hand, exists independently of him, and is the universal subject of human labour. All those things which labour merely separates from immediate connexion with their environment, are subjects of labour spontaneously provided by Nature. Such are fish which we catch and take from their element, water, timber which we fell in the virgin forest, and ores which we extract from their veins. Marx: (1976)

¹ This notion, as well its opposition to some alternative conceptions, notably in terms of control, is discussed at length in: (Tittenbrun 2011a; 2011b).

It is true that this extraction of ores, coal, crude oil and other mineral deposits always requires some expenditure of human labour power. But can even the greatest effort of a worker equate with millions of years required for the natural processes to produce these forms of wealth? If the crucial aspect of economic property is apparent in the case of even transhistorically understood work, the more this is the case in the most developed system of production and labour, including exploitation of nature itself, as Marx in “Capital” (vol. I, ch. 15) points out: that the productive forces resulting from co-operation and division of labour cost capital nothing. They are natural forces of social labour. So also physical forces, like steam, water, &c., when appropriated to productive processes, cost nothing. But just as a man requires lungs to breathe with, so he requires something that is work of man’s hand, in order to consume physical forces productively. A water-wheel is necessary to exploit the force of water, and a steam-engine to exploit the elasticity of steam. Once discovered, the law of the deviation of the magnetic needle in the field of an electric current, or the law of the magnetisation of iron, around which an electric current circulates, cost never a penny. But the exploitation of these laws for the purposes of telegraphy, &c., necessitates a costly and extensive apparatus. [...]

Every instrument of labour enters as a whole into the labour-process, and only piecemeal, proportionally to its average daily loss by wear and tear, into the value-begetting process. But this difference between the instrument as a whole and its daily wear and tear, is much greater in a machine than in a tool, because the machine, being made from more durable material, has a longer life; because its employment, being regulated by strictly scientific laws, allows of greater economy in the wear and tear of its parts, and in the materials it consumes; and lastly, because its field of production is incomparably larger than that of a tool. After making allowance, both in the case of the machine and of the tool, for their average daily cost, that is for the value they transmit to the product by their average daily wear and tear, and for their consumption of auxiliary substance, such as oil, coal, and so on, they each do their work gratuitously, just like the forces furnished by Nature without the help of man. The greater the productive power of the machinery compared with that of the tool, the greater is the extent of its gratuitous service compared with that of the tool. In modern industry man succeeded for the first time in making the product of his past labour work on a large scale gratuitously [my emphasis], like the forces of Nature. (1976)

I. 2. OWNERSHIP OF LABOUR POWER

The rent theory of ownership that has been SKETCHED out above is also applicable to labour power. Labour power refers, of course, to all those physical and psychical human qualities that enable one to do work in general or some specific type of work. That an individual owner of his or her labour power may derive gratuitous benefits from this ownership is shown by the following example:

Considering the average annual increases in earnings in the USA, Japan, Germany, the UK and Sweden since 1960, in contrast to the idea of increasing wage differentials between countries, a picture emerges of a high degree of wage standardization in manufacturing.

The overall differences in wage developments between the countries in 1989-95 are less than half the figures for 1960-1979, and substantially lower than in the 1980s. To an extent the trend towards wage standardization in manufacturing may be explained by reference to the intensified competition between national economies, even though some countries such as the USA are basically producing their goods for the North American markets.

What seems to be more important is that, as a result of the ongoing process of internalisation and globalisation, wage negotiations in Europe as well as in North America and Asia are increasingly coupled to global wage standards at the level of firms, sectors and nations.

Employers and trade unions use international industrial statistics and trend extrapolations in conjunction with national and local negotiations. Employers as well as trade unions are trying to legitimize their bargaining demands by referring to the situation in other countries. A good illustration of how cross-country comparisons may influence national wage negotiations is provided by the 1999 collective bargaining round in Germany. Employer federations rejected union wage claims based on internationally high wage costs. IG Metall argued that they have a special responsibility as 'trend setters' in other European countries. The outcome of these negotiations between IG Metall and the German employers has had a clear impact in terms of setting the negotiation standards for smaller economies such as Sweden whose representatives from the LO were even invited as observers to the negotiations between IG Metall and the German Metal Employers in 1999.

In most cases wage standardization of the kind reported above, is a more implicit process. That this kind of standardization may also be formally institutionalised is illustrated by the Belgian 'Law of competitiveness' 1997-1998, enacting a legal wage norm based on average wage increases in France, Germany and the Netherlands. Overall, trade unions seem to have become more active than employer federations in terms of adopting strategies aimed at improving cross-national co-operation in wage bargaining issues. However, it is reasonable to assume that the relative importance of European wage bargaining standards will increase with a view to improving national competitiveness. Similar strategies and attempts to set standards for wage negotiations are also to be found in the USA (cf. The Bureau of National Affairs 1998). At the level of individual employers it seems that a number of multinational companies are trying to work out joint or similar bargaining objectives in their countries of interest.

At the national level we may observe a high degree of synchronization in hourly earnings within industrial production ever since the 1960s. What appeared as relatively large differences in annual wage increases between some highly developed capitalist economies prior to 1989 reveal at once relatively small differences within countries?

Thus far, there are no indications of a qualitative break and a restructuring of wages according to pure market criteria. (Hass & Leiflufsrud 2002)

According to the data, then, a given worker, by virtue of owning particular kind of labour power, that is, collective labour power connected with the fact that he or she belongs to a definite collectivity, defined in union, national or even transnational terms, receives certain benefits in the form of higher or stable wages. What should be especially pointed out in this context is the circumstance that those are extra advantages, i.e. independent of one's work.

The foregoing, as we shall see, constitutes the essential theoretical framework that shall be used throughout the study. The aforementioned analytical framework includes also the notion of non-economic ownership. Just as classes are grounded in economic property relations, their counterparts in the non-economic sphere constitute the foundation of social estates. In plain language the aforementioned notion, discussed at more length in (Tittenbrun 2011a; 2011b) has much in common with such phrases as privileges, perks, special advantages, and the like.

PART II. HUMAN CAPITAL

II. 1. HISTORICAL BACKGROUND

The following is but one testimony to an ever increasing popularity of the construct under investigation: “The winner of the public Management Fad of the Year for 2001 is the human capital crisis! The Public Manager (TPM) inaugurated its first ever Management Fad of the Year award for the purpose of ‘recognising the management change effort, concept, challenge, or issue that most dominated public management circles for that year. Following the example of Time magazine that designates the man or woman who has captured the most headlines or had the most impact, it is now time for TPM to bestow our Management Fad of the Year for 2001. Human resources management, or HRM, has been around for nearly two decades, and most managers and employees still call it ‘personnel’” (Hyde 2002: 3).

The idea of human capital can be found in the writings of classical economists. According to Adam Smith, for example, fixed capital consists of the tools, buildings and knowledge embodied in employees and their skills. This understanding of ‘human capital’ resulted from the assumption that capital is constituted of the means of production produced with the use of material resources.

Employee earns his qualifications and skills while studying or training. At the same time he or she must receive funds for maintenance. Material resources, capital spent on these resources are real expenditure creating fixed capital, which therefore is somehow embodied in man. Skills lead to greater efficiency and productivity of the worker, which in turn depend on the division of labour. According to our formerly mentioned socio-economic approach we are actually dealing here with the economic ownership effect.

Further development of the concept of accumulation of knowledge and skills of human beings is associated with the name of J.B. Say. According to Say work may be either productive or not productive. This second type can bring intangible effects, such as a lecture which is used by the student. Processing such effects (lecture) by, as Say understood, its consumption increases the production fund. However, this fund is a form of capital, from which its owner may derive income or profit. In other words, the ‘capital’ which one man has in the form of knowledge, skills, was transformed into an intangible result. In the process of accumulation and consumption, this effect was turned into a “capital” of another person. In the “Treatise of political economy” Say also alluded to other aspects that currently form the human capital theory. He suggested a method for estimating the value of ‘human capital’ according to the achieved income in the period of earning. He also touched the problems of emigration of what has later come also to be termed human resources from the point of view of losses for the left country. A more theoretically reasonable is, however, an interpretation of this issue in terms of the socio economic theory of property which turns attention to the national nature of expenditure and training of labour power, whose holders’ emigration leaves the nation without the possibility to benefit from the results of education and, taking in the form of their private labour power the effects of this education they transfer them to the other nation, including its specific classes. Thus, an accurate picture of the socioeconomic nature of the process concerned cannot be drawn by any theory of human capital.

Some observations on the quality of human resources may be encountered in a pragmatic approach to business processes by A. Marshall. He lists the characteristics of labour as a production factor, to which he particularly includes: lack of the existence of the capital market for

labour and integral bond of employee with the work done by him or her.² Marshall also argued, touching implicitly the economic issues of ownership, that during training of workforce from the initiative of the employer external benefits arise from which effects the employer can not fully benefit.

Arthur Cecil Pigou stated: “Equally with investment in material capital, there are investments in human capital. Upon recognition of this fact the difference between saving in the consumption and savings in production is blurred. To some extent, consumption is an investment in an individual production capacity” (1928:29). And, again, this claim touches the economic and sociological issues of property, but since it does so in a cryptic way, it hides more than it discloses.

Within the perspective of modern neoclassical theory the pioneer of the use of the term was Jacob Mincer in the article “Investment in Human Capital and Personal Income Distribution”, published in *The Journal of Political Economy* in 1958.

Apart from this economist, among the best-known works regarding human capital are those by Th. Schultz and G. Becker, particularly the book entitled “Human Capital”, published in 1964. It was Schultz (1960) who first referred to investment in man as “human capital”. Interestingly enough, Schultz is aware that human capital is rather different from other types of capital: it is embodied in people and is a poor collateral in credit/debt relations, so that capital market imperfections are more likely to be important for human capital investments than for physical and financial ones (see Aghion and Bolton, 1997; Galor and Zeira, 1993).

In terms of economic and sociological forms of ownership one should also consider the following condition, often cited as explaining and justifying the introduction of the concept of human capital, and consisting of the special characteristics of knowledge: “Unlike manual labour and other production factors, the use of knowledge leads to its expansion and self-development, ‘as far as physicians acquire more experience, their knowledge base grows, similarly to their equipment in human capital. Economics of scarcity is replaced by spontaneous generation. Portable knowledge can be shared and transferred. This transfer does not prevent the use of the given knowledge by its original holder” <en.wikipedia.org/wiki/Human_capital>.

II. 2. WHAT IS HUMAN CAPITAL?

The preceding can give us a glimpse of the meaning of the concept under consideration, but to be able to derive robust conclusions, it is necessary to overview a representative collection of definitions produced by its various users.

It may seem surprising, given the wide popularity of the concept of human capital, that the answer to the above-mentioned question appears to be rather difficult. As one commentator says: “I have had a quick look at all the papers, articles and books about human capital that I have in my office and at home, but it seems that hardly any of them provide a definition of human capital. One of the most famous authors in the field of human capital theory is Gary S. Becker (e.g. 1993). [...] Even he doesn’t explicitly define human capital” (Schonewille).

Nevertheless, we need to dig over the vast literature to see for ourselves if this is really the case.

The similarity of concepts of human capital and a key object of economic and socio biological ownership, i. e. labour power is demonstrated by the concise definition of the former:

² Note that this characterisation anticipates some of the criticisms of human capital theory.

“human capital is embodied knowledge and skills” (Becker et al., 1990). In the same vein, another economist states that “human capital” shall be “defined as the skills embodied in people” (Abdel-khalik 2007). Topel (2000) defines human capital in an almost identical way as “the intangible stock of skills that are embodied in people.”

The two terms become similar to the point of identity in the definition referring to human capital as “knowledge, skills, competence and other attributes that are relevant to economic activity” (Zotteri 2002), or “Human capital can be broadly defined as the productive capacity embodied in individuals. A person’s productive capacity is related to a variety of factors, such as knowledge and skills, physical and mental conditions, life experience and attitude. As the ‘knowledge and skills’ is the most important determinant in a person’s productive capacity, human capital can be also defined as the knowledge and skills embodied in individuals. This is the definition adopted by the OECD (1988: 9).

The ‘knowledge and skills’ definition focuses attention on the contribution of education and training to a person’s human capital formation. This is more in line with the conventional approach of the human capital theory, formulated by Schultz and Becker in the early 1960s. Some other authors extend the concept of human capital to consider the roles of health and other factors in a person’s human capital formation (Hui 1985)”, or “Human capital is the stock of competences, knowledge and personality attributes embodied in the ability to perform Labour so as to produce economic value. It is the attributes gained by a worker through education and experience” (Sullivan, Sheffrin 2003).

The above definition is useful in that it does not restrict the implicitly adopted concept of labour power to the type of labour power engaged in the process of production, which allows one to pinpoint the weaknesses of the following definition “the effective use of physical capital itself [is] dependent on human capital. [...] technical, professional, and administrative people are needed for the effective use of physical capital” (Abbas 2000). This statement blurs the differences between different types of labour power, including in particular ones that are essential to directly set in motion the means of material work and those that are not even indirectly involved with the process of material production, which may hide behind the term of “administrative people”.

That such fine distinctions are indeed needed becomes clear, inter alia, in the face of other concepts, related to human capital. The connection with labour power and quasi-labour power, i.e. those personality characteristics that underlie non-commercial activities, such as household chores, is also evident in the case of other cognate concepts, e.g. feminine capital, or biocapital.

That the quality of knowledge of human capital scholars on the field of work which obviously should be their most important resource leaves much to be desired is evidenced, inter alia, by the following assessment: “Dyl expands the scope of meaning given human capital, describing it as “both knowledge and the powers of reason and judgement necessary to lead an intellectually mature life” (Forbes, Paul 1991). In actual fact, the reverse is true, the definition given above is an example of the so-called “lame” concept, e.e. whose scope is to narrow compared to its purported substantive referent. Whilst it rightly underscores the role of knowledge in the process of labour. But as a generalisation, it is misleading. As though all types of work implied an intellectual effort to the same degree, as though there were no workplaces where human labour is still a drudgery, and not an intellectual fun.

The above mention of physical capital elucidates a key weakness of human capital definitions. The authors of a, nomen omen, joint paper argue that “the value jointly created by a firm and its workers depends upon the attributes of both the firm and the workers.

By attributes we have in mind for workers, their knowledge and various skills (human capital), and for the firm, both physical capital and business strategy” (Mailath et al. 2003).

The fact that the economists cited refer in the second sentence to physical capital brings out the artificiality of the association of the same noun with an adjective “human”. Why one should refer to skills in terms of capital? The authors cited do not give such a parallel concept in the case of physical capital, after all. And why, in the same vein, one should not couch “business strategy” in terms of, say, “strategic capital”? And indeed, we are mistaken by but a little margin, as the economists cited above refer in the same article to “the manager’s business-strategy-specific human capital” (Mailath et al. 2003).

All this illustrates tremendous confusion pertaining to the perspective under investigation. The resemblance in question is also apparent at the level of non-academic, formulated for practical purposes definitions.

The firm called Human Capital Management which encourages its clients to “Improve outcomes using integrated workforce management solutions” <www.apihealthcare.com> defines human capital as “The Set of skills which an employee acquires on the job, through training and experience, and which increase that employee’s value in the marketplace”. The stress on those employee skills that are acquired in the workplace is understandable given the nature of business pursued by the authors of that particular formulation.

A dictionary definition states that “Human capital is the attributes of a person that are productive in some economic context. Often refers to formal educational attainment, with the implication that education is Investment whose returns are in the form of wage, salary, or other compensation. These are normally measured and conceived of as private returns to the individual, but can also be social returns” <Econterms.About.com>.

It is characteristic of the literature on a diversity of capitals that many its practitioners are so keen to pass into history as creators of some new form of capital that they often ignore their peers’ analogous accomplishments, which leads to many overlaps. A case in point is a researcher who asks: “Are there sex differences in the utilization of educational capital among college-educated workers” (Shauman 2009).

Yet another evidence of confusion and logical fallacies (in the case in question – a vicious circle) frequently involved in the definitions of the concept under investigation is provided by the following formulation: “Some elements of human capital-headcount, salary cost and training investment” (Matthewman 2003) where what the majority of human capital theorists consider as an effect (salary, etc.) of human capital is treated as its element. A logical fallacy, known as *ignotum per ignotum*, plagues the following definition of the concept crucial to human capital theory: “activities that influence future monetary and psychic income by increasing resources in people [...] are called investments in human capital” (Becker, 1975: 9). Becker seeks to elucidate the idea of human capital by invoking its sister concept of resource. What, if any, are the differences between the two? Note also the presence of “psychic income” in the definition. How does it compare to monetary income? Can the two be calculated in common units of measurement? Of course, these are largely rhetoric questions. We believe there is no good answer to them.

A common within the perspective under consideration association of human capital with formal education highlights not only its commonality with labour power, but the advantage of the latter concept consisting in it being restricted to merely those physical and mental characteristics which are actually utilised in the work process. Meanwhile, the definitions of human

capital are often underspecified in that crucial regard, which underscores that the biggest challenge to human capital theory is underemployment of credentialled knowledge:

Growing proportions of people who have invested many years of their lives in acquiring advanced formal educational qualifications are unable to obtain commensurate jobs. [...] Canadian studies [...] indicate that, despite the fact that employers have inflated the entry requirements for many jobs since the early 1980s, over 20 percent of all job holders have continued to have higher credentials than their jobs required. Among those with post-secondary credentials, the rates of credential underemployment are often much higher. Recent surveys of food-bank users in Toronto have found that nearly a third of food-bank users have some post-secondary education and around 10 percent are university graduates. The performance gap is the difference between jobholders' knowledge and the actual knowledge needed to do the job. Objective estimates based on General Educational Development (GED) measures indicate that job performance requirements have increased much more slowly than employers' entry requirements over the past two generations. Therefore, in light of the very large knowledge gains generated by the expansion of both organised education and informal learning, the aggregate underemployment of workers' actual knowledge is likely to have increased greatly. Recent GED-based analyses suggest that as many as half of current employees in North America may now be underemployed in these terms. While such findings may fly in the face of the apparent growth of 'high performance, high tech' firms, close empirical studies have found that even in such firms the performance requirements for most employees are quite modest. Our in-depth interviews with recent university graduates who have experienced both credential and performance aspects of underemployment discover general sentiments of deep disappointment and confusion that their educational investments have not paid off. (Livingstone 1997)

From this point of view, it is evident that it matters a lot whether the policy-makers adopt as their guide human capital or labour power theory.

It is not the only example of a lack of clarity of the concept being discussed that the notion of human capital as a result of formal education does not sit well with, e.g. the following view: "tacit knowledge is often discussed as a type of private knowledge that is not yet formalized and represented in a common and factual manner.

I would like to refer to [this] understanding in terms of human capital that is, the possibility of a unique, private knowledge" (Day 2002).

Ludwik Petrazycki, mentioned elsewhere in the book, coined in fact a pair of concepts – a "leaping" concept is one which oversteps its logical bounds, as opposed to its correlate in the form of "lame" concept, that is, one whose explicit meaning fails to cover its substantive referent. It is a genuine feat that the construct under consideration manages to combine both these errors. Its over-inclusiveness is pointed out in many places in the work, and the latter fallacy is shown by, inter alia, the following pronouncement: Human capital (knowledge and skills) can be accumulated in various forms: education, working experience, innate ability, etc. Even within the category of education, it includes formal schooling activities including compulsory primary and secondary education and post-school education such as universities and vocational training institutions. It also includes informal education in the form of learning within family and early childhood settings and self studies. It would be a daunting task to include all of these factors in the measurement of human capital in one go. (Hui 1985)

Interestingly enough, economists working within the human capital framework quite often use terms clearly pointing to the real referent of that buzzword. For example, Acqua and

Amoako-Gyampah (2003) state that “by human capital we mean the knowledge, skills and expertise embodied in the labour force that is available within a firm and/or the relevant labour market”. And, correspondingly, “the key is what economists call your human capital. Early in life, you tend to have very few financial assets-investments you can sell for money-but you do have a lot of time in the labour force in front of you, and that is your most valuable asset. As your career goes on, you earn a salary and devote some of it to acquiring investments. So the goal of investment management during your working life is to efficiently convert your human capital into financial” (Schurenberg 2008).

Even the above statement contains some phrases suggestive of what is in actual fact at stake here. To a much more greater extent this applies to what comes later, where even the shape of the term “earning power” is clearly suggestive of something rather different than capital, human or otherwise; “you start with all the wealth you need in the form of your lifetime earning power.

Your job is to convert that personal asset as efficiently as possible into financial assets you can live off once your earning power runs out” (Schurenberg 2008).

The affinity mentioned above is also shown by the otherwise surprising and rarely quoted use of the term ‘human capital’ by non other than Karl Marx, who wrote in relation to one of the modes of production within the feudal economic formation of society: One of the ways in which the nobility disposed of its human capital was letting them (the carriers - note. JT) or allowing for an annual fee (fodder) per journey and earn a living in a random way”

This type of serfdom of feudal peasant was expressed in the necessity for donations to the owner of labour rent, although he, as a partial holder of its own labour power, to some extent freely disposed of it. (1859)

If we were to comment on this Marxian statement, his treatment of the feudal peasant as only a partial holder of his/her own labour power is consistent with our own understanding of the notion involved. However, Marx’s use of the term “human capital” is, to our mind, not Marxian, or more precisely, inconsistent with his framework of historical materialism. Historicity is commonly regarded as its primary attribute; meanwhile, “human capital” in the aforementioned proposition is clearly out of place in that regard-what Marx really had in mind, but for some reason failed to express it that way, is the fact that the feudal lord was the owner of his peasants’ labour power. And there is no need to replace the latter by any concept suggesting a capitalistic background. Within the capitalist mode of production, the capitalist’s expenses on the labour power employed at her firm are regarded as a variable capital, but again, this should not be conflated with any “human capital”.

More broadly, viewing the working class and other employee classes as owning their own labour power points to the most fundamental, in our view, flaw of human capital theory which, contrariwise, treats them in effect not as employees but as their own employers! From its perspective, after all, the classes concerned own their own human capital, hence should be treated as capitalists. And indeed, proponents of the notion under consideration argue that:

It is time to take the asset metaphor to a new level, to think of workers not as human capital but as human capital owners and investors. Like the employee-as-asset idea, the image of workers as investors is not exactly new... Like the asset notion, the investor notion emphasizes value ...

Workers, not organisations, own this human capital. Workers, not organisations, decide when, how and where they will contribute it. Like financial investors, some human capital investors are more active than others. The point is that, as the owners of their human capital, they can make choices. (Weatherly 2003)

The author cited above is apparently not interested in the fact that the characteristics he describes, such as the ability to withdraw one's own work contribution are satisfactorily explained by the employee's ownership of labour power. Meanwhile, the members of the populous "human capital camp" fail to see the evident absurdity of conclusions derived from their premises, such as those drawn by the two authors: We "distinguish human capital from physical capital in two ways: (1) human capital is inalienable and can exercise a one-sided option to leave the firm, and (2) human capital is not perfectly replaceable" (Smith, Wall 2005). Another human capital analyst, whilst perceiving this possibility of quitting, continues however to attribute that possibility to the strange entity named human capital: "human capital—the asset that doesn't sit on the company's books at night, but goes home and has the option of whether it comes back the next day" (Johnson, Roebuck 2008).

Similarly, the following author singularly fails to realise that his notion of free agent reflects the fact that employees own their own labour power, and by no means does not imply, as he claims, that they own capital, human or otherwise:

Employees have taken ownership of their careers, responsibility for their development and accountability for their performance—all at the urging of management. People stopped acting like pawns in the hands of corporate chessmasters and began behaving more like free-agent owners and investors of their own human capital.

If people are self-directing investors of human capital, then their social contract with employers—their "workplace deal"—is an investment contract. And the human capital available for investment comes in the form of knowledge, abilities and behaviours, which are all built and honed through education, training and experience. Like any investor, people who contribute human capital want a return on their investment. This return also takes different shapes: an interesting and fulfilling job, a chance to learn and advance, recognition for achievement and financial rewards. (Davenport 1999)

What the aforementioned author would rather perhaps not to address is the awkward circumstance that it would be rather hard to find any other capital owners who would be engaged in the exchange of their property into "an interesting and fulfilling job". And this is understandable enough - should he realise this unique character of the alleged employee capital, his whole conception would, in still economic terms, went bust. A similar misinterpretation pertains to another statement associating human capital with the concept of exchange: "In East Asia, the Philippines is the largest contributor of migrant labourers to the global workforce.

The Philippines [is] the second largest exporter of human labour in the world, with human capital as its largest export commodity. A key feature of the research identifies the significance of commodifying human capital" (Goode 2009). The author argues that "maximizing human resources, as a potential and un-channelled catalyst for improved economic growth is a good investment in social capital. By transforming human resources into a trade commodity, this economic transaction between labour-sending (parent) and labour-receiving (host) countries becomes a rational process that takes on emotional qualities, and must be considered where the trade of human labour is concerned. (Goode 2009)

Goode mentions "labour", "human resources" as possible equivalents of his "human capital", so an almost only term that is missing on the list is one of labour power which indeed is a

commodity, without any need of any additional commodification. An analogous misunderstanding is present in the following argument whose premise is a truly surprising discovery that human capital(ists) have consciousness, as if the latter did not underlie all market exchanges referred to later: “The self-conscious nature of human capital among [...] workers means that the nature of employer-employee relations becomes more explicitly market-based” (Evans et al. 2000).

Yet another formulation of that sort glosses over the inherent (in a commodity-money economy) tie between labour power and market relations, putting forth instead the concept of capital of ability, as if the ability to work were not just labour power. “Workers [...] are increasingly managing the capital of their ability as employees or free agents”. (Evans et al. 2000).

Evans and others’ further reasoning is logical, but it is not drawn to its logical conclusion. To begin with, they recognise that the meaning of the term ‘human capital’ remains cloudy: Studies tend to focus on the means of growing human capital in terms of ‘best practices’ people management for the training, development and motivation of people. Other research attempts to quantify human capital in terms of the cost of human resources investment in people, turnover and absenteeism.

Taken at face value, it seems relevant to account for the knowledge created by individuals and groups within organisations. In reality, however, this amounts to an evaluation of intellectual property that belongs to the organisation in which it was created. That is why the provocative issue of human capital revolves around this key question: Who owns intellectual property?

WHAT IS HUMAN CAPITAL? The concept of human capital is a problematic one. If human capital is defined as the potential and capability of people to add value to the goods and services they produce in the workplace, it must stand that this capital is only for rent through employment or on a more limited contractual basis. Unless laws prohibiting slavery are repealed, the specific decision of any individual to make his or her human capital available for value creation in an organisation is a free choice. Human capital then belongs to individuals, not business organisations.

The irony is that although human capital may be increased by high-commitment work practices, the success of efforts in developing, challenging, motivating and rewarding individuals depends on their willingness to invest their personal human capital. This decision is discretionary. (Evans et al. 2000)

What the authors cited above have done, is kind of listing of some key reasons for which the concept of human capital should be replaced by the concept of labour power owned by employees. The fact they dispose of it, lease it out to their employers constitutes precisely the manifestation of that ownership.

Why do we believe that the process of exchange in which employee owners of labour power are engaged should be referred to as one of leasing rather than hiring or selling? The classic Marxian and Marxist notion of workers as selling their own labour power is in our view erroneous. Let us compare the alleged exchange: employee-employer with a regular retail transaction. When you buy, say, a TV set, you can do with it what you like, according to classic Roman definitions of private property: use and/or abuse it, e.g. throw it out of the window, give it to someone as a present, and so on. The capitalistic employer is in a different situation, he or she cannot sell or otherwise alienate “his/her” workers, all she can do is to assign them to a particular work slot and supervise their actual work so that they met the terms of exchange. But none of the workers is her slave or serf, such a worker can quit and find another employer.

That is why what he or she has done with his or her labour power in the course of the act of exchange is more like a landlord leasing out his land to a farmer in return for the ground rent. The farmer is not allowed to sell the land, but he can take advantage of it as a source of his income. Likewise, the capitalist employs the labour power acquired from its owner in the process of production of goods or services in order to profit from it.

The concept “lease” is preferable to “hire” as the latter refers to personal property, as opposed to private one. One hires a room or a house from another person when one simply lives there. But what constitutes therefore personal property can be transformed into private property if the flat in question functions as business premises.

The matter is made even worse for those treating human capital rather than labour power as a property of employees by the fact that their view is by no means unanimously shared; other writers would locate the locus of ownership of human capital differently: “Human capital is an organisation’s stock of knowledge, technical skills, creativity and experience.

It’s a holistic view of how people combine, both formally and informally, to deliver business results” (Matthewman 2003). The following human capital expert also leaves no doubt what it is all about: “The objective of a human capital strategy is the maximization of the return on investment (ROI) on the human capital of the organisation to impact the bottom line in the best way possible” (Johnson, Roebuck 2008).

The implausibility of the notion of workers as owners of (human) capital rather than sole labour power becomes evident when one compares that notion with cases of legitimate use of the term “human capitalists”, as in the following excerpt from the business press concerning a company named “FirstWheel Accelerator owned by Brian Tsuchiya. The company’s business model relies on human capitalists or contractors, who agree to work for a startup business without pay but for a future stake in the enterprises. Tsuchiya found human capitalists by posting advertisements on the Denver Java Users Group, Rocky Mountain Internet Users Group and other Web sites”(Caley 2006).

II. 3. HUMAN CAPITAL AND CLASS

In connection with the issue of class structure, an attention has been drawn to the creation of its distorted, fantastic image by human capital theory. The scale of confusion present in the theory with respect to class may be gleaned from the following statement: “A set of background characteristics includes social class, income, education, marital status, age, sex, and acquiescence (i.e., tendency of high rating). The former three represented human capital” (Cheung, Chen 2010).

Education in the theory under consideration is conceived of as the basis for acquiring human capital, and income as a key consequence of possessing one, but what about class? As a matter of fact, human capital as a misleading name of labour power has obviously a lot to do with social class, since the bulk of class members own their labour power, but this does not apply to some crucial classes. Besides, the authors of the above observation do not mean any such complex considerations, what they in all probability have in mind is in truth any class theory at all, but, rather, a theory of stratification in that income constitutes a widely used criterion for ranking particular social strata, often, if not in most cases, erroneously termed social classes. The concept of class³ structure, however, is not hierarchical. When your schooling and

³ More in: (Tittenbrun 2011a).

your skills increase your human capital, what they do in reality is enhance your abilities to produce capital, in the real and precise sense of the word, during the period in which you apply your labour-power. Any 'improved' human capital enhances one's capacity to create capital: from the point of view of capital, not from the point of view of the human involved. In fact, for capital it does not matter at all whether a human is involved or not as productivity is concerned, which is why its ideology, neoclassical economics, cannot distinguish human from nonhuman inputs. This raises a second issue, namely that because labour itself is done by humans, labour-power also resides in humans. The real struggles in the workplace between labour and capital take place precisely because the human and his labour are not commodities, and cannot be commodities except under conditions of actual slavery.

In the qualitative process of labour, those humans will therefore attempt to resist their labour-power being used solely to produce capital and as much as possible in as little time as possible. Far from being mere inputs into a process, to be bought and discarded at will by 'entrepreneurs' and to be 'rewarded' for their productivity in helping make a profit by a wage equal to their ability to offer such 'help', human beings resist being commodified and resist working for someone else's benefit. The concept of human capital therefore inherently passes by the class struggle and the real forms it takes in the workplace.

In fact, workers can have high skills and great knowledge of production processes they are involved in at their work, but low human capital, because they are not inclined to maximally use them to help their employer make more profits! (Krul 2010)

The above statement is useful inasmuch as it (despite of it being authored by an economist) underscores the inherent social side to the economy

II. 4. HUMAN CAPITAL AND IDEOLOGY

The proponents of theory under consideration would insist that both the workers and their class opponents earn "rates of return" on their respective capitals. By the same token, the theory accomplishes a genuine feat – erases out of existence the crucial class cleavage in the capitalist economic formation of society. All the above-mentioned classes own capital, after all. Albeit it does not directly detracts from the cognitive merits of the theory, which must be demonstrated or called into question separately, the ideological nature of the just mentioned conclusion is crystal clear.

The theory of human capital blurs not only its relationship to the ownership of labour power, but also the means of production. The authors of a collective study argue that "inequality in the distribution of land ownership, adversely affected the implementation of human capital promoting institutions (e.g., public schooling and child labour regulations), and thus the pace and the nature of the transition from an agricultural to an industrial economy, contributing to the emergence of the Great Divergence in income per capita across countries. The basic premise of this research, regarding the negative effect of land inequality on public expenditure on education is established empirically based on cross-state data from the beginning of the 20th century in the United States" (Galor et al. 2006).

The potential of human capital theory to function as a class ideology does not end here, though.

A harsh critic condemns its ideological function manifested in its capacity "to justify inequalities (...) (with reference to (...)) two people working a similar number of hours at the same

company, one of which earns 10, 100 or 1000 times more than the other. The concept of human capital justifies this glaring inequality, as well as any other, which can always be said to result from the 'non observed' and 'non observable' differences in human capital in both people" (Hyde).

More broadly, "A tradition within the U.S. of advocates of educational change citing the economic benefits of education is attributed to 19th century education advocate Horace Mann, and it is noted that this argument remains prevalent in discussions of education and education policy in the 21st century. While acknowledging that all societies have an interest in the creation of human capital, the authors argue that education has failed to generate the promised economic benefits to most individual students or to the country, serving instead as a distraction from more fundamental problems with the labour market and income distribution" (Kantor, Law 2010).

According to Hyde, human capital theory plays equally notional role under the legal doctrine, not adding an ounce of explanatory power. The discussed theory has not become part of the accounting practice, for example, when AT & T Corporation reduces employment by 40 thousand employees that we will call conceptual, "it does not writes down any share capital; it only subtracts their salaries from the amount of corporate spending" (hyde). This is related to a key weakness of the analytical perspective under investigation. Even those who believe that "the main source of power for the human capital model is the fact that it allows expenditure on learning to be classified as an investment" (Schuller 2011) acknowledge that "yet it is very clear that the rhetoric on this is rarely matched by practice, where such expenditure is generally still reckoned as a cost.⁴ Exploration of how accounting systems, at national or corporate levels, can be adapted to give technical application to the investment metaphors, is still very much in its infancy" (Schuller 2011).

Another manifestation of its ideological bias which at the same time substantially reduces the explanatory power of human capital theory is its failure to perceive the relationship of unemployment, notably long-term unemployment to the concept of "Depreciation on human capital" which according to the said theory arises solely "from ageing, deaths and emigration" (Hui 1985). Well, death is a natural occurrence, at least on the surface⁵ having nothing to do with the nature of capitalism. Unemployment, however, expresses its deepest contradictions and is one of its key insurmountable problems. And the thing is it leads to a more or less permanent loss of skills, and thus to devaluation of labour power.

Hyde goes on to say that the theory of human capital plays no role in the tax law or accounting practice, and its absence facilitates preference of lay-offs and reduction over other methods of cutting corporate costs." The theory is also absent in employment discrimination⁶

⁴ Therefore, one should take with a pinch of salt the words of Leif Edvinsson, Director of Intellectual Capital, Scandia AF who makes the following case for the concept being discussed: "If you can demonstrate that human resources are a form of capital and not an expense, valuing people will be easier to justify and accomplish" (Edvinsson, Malone 1994). Otherwise, it might be interpreted as reflecting some special traits of capitalism, Scandinavian style, which epitomises the nicest face of capitalism for stakeholders.

⁵ Its class and estate incidence, of course, has a lot to do with the socio-economic nature of this particular formation of society.

⁶ This is linked to more general point indicated by Steel: „In ignoring the relevance of values, neoclassical analysis overstates the relevance of preferences. Thus, for illustration, Gary Becker's 'The Economics of Discrimination' (1957) and Harry Johnson's 'A Theoretical Model of Economic Nationalism

cases in which requirements of education regarding individual positions are pushed aside because of their “divergent effect” on different racial groups. Such educational requirements can not be maintained as a stimulus for further individual investment in human capital. On the other hand, human capital theory hides behind the justification of otherwise not defensible features of the labour law, such as competition limitation, the obligation of employees to pay back employers for training costs and trade secrets. The theory of human capital is a fundamental obstacle on the road towards the realisation of our most urgent legal and economic needs: to understand the economics of information, particularly ownership of the information when it is nobody’s property. (Hyde).

Without challenging the validity of the argument of the author, one has to accuse him, in turn, of legal formalism of the concept of property, showing in the use of the above-mentioned notion of nobody’s property behind which most likely some sort of common property is hiding.

Going beneath this kind of juridical or commonsense fictions, the socioeconomic theory of property adopted in the present study allows one, as we have seen, to include within the purview of analysis the phenomena neglected by the notion of human capital, such as discrimination based on gender, ethnicity, etc. connections, networking, personal credentials, etc. All can be incorporated into the framework of our theoretical approach, as shown, among others, in the books mentioned above (Tittenbrun 2011a; 2011b). The notion of human capital represents an ideology in yet another sense. As this management fad is deemed “cool”, corporate managements often pay lip service to it, without any serious attempt to put its implications into practice. In this context a HR expert draws attention to the fact that:

Survey after survey has found that executives believe finding and developing the right talent should be one of their top priorities and that their company’s human capital is one of their most important assets. Yet few corporations are designed to operate in ways that recognise the importance of human capital.

Most companies understand how to leverage financial capital, machinery and equipment, but when it comes to human capital, it is a very different story. Jobs are designed to follow a simplified, standardized approach to the execution of work processes, and individuals are controlled through well-defined hierarchical reporting relationships, budgets and close supervision.

in New and Developing States’ (1965) might be indicted for having "fostered the illusion that 'raising the cost' of discrimination (or nationalism) is the simple and sovereign policy instrumen" (Steel 2004) For getting people to indulge less in those odd "tastes" " (Hirschman 1984: 90). Along the same lines, Steel stresses that „in restricting explanations of behavioural patterns to changes in prices, incomes, and other "economic" variables to the neglect of any appraisal of values, neoclassical analysis was destined to draw implausible conclusions. Thus, in their analysis of beneficial and harmful addictions, Gary Becker (1930-) and George Stigler (1911) "take the elasticity of the individual's demand curve for music or heroin as given and, it would seem, immutable" (Hirschman 1984: 90). Thereby, the normative aspects of education are excluded from the "positive" remit of neoclassical economics. The implicit assumption—that, though responding rationally to price incentives, both the Philistine and the drug addict are beyond redemption or, rather, have no call upon our abilities to educate—denies any consideration of the uniqueness of man within the animal kingdom. The uniqueness is that man is able to reflect upon his values (or opinions): Man is the only animal that laughs and weeps; for he is the only animal that is struck with the difference between what things are and what they ought to be (Hazlett 1819)" (Steel 2004).

Rather than encouraging people to be important contributors, most of the systems in organisations are designed to control their behaviour. If we really took human capital seriously, we'd run companies in a very different way.

Yes, we would treat people well and say they are important, but we would do much more. We would design organisations so that people are a source of competitive advantage. Hiring some highly talented individuals won't do it! Training programmes won't do it, either! Even being a best place to work won't do it.

Making human capital a source of competitive advantage requires much more than making some quick fixes to a control-focused organisation. It requires attracting and retaining the right people as well as organising and managing them effectively. Attracting and retaining the right people is not easy, but most organisations can get it done if they devote enough resources to it. Actually developing and employing organisational structures and operating systems that lead to an organisation's human capital being a source or the source of competitive advantage is another story. (Lawler 2009)

Returning to the former, scientific focus, it may be noted that the fundamental theory of G. Becker has been undermined by the microeconomic approach to information theory. Among others, AS Fine (2001: 20, 46) points out, in its framework "the category of information asymmetry was applied to completely disregarded by Becker's financial markets", and similarly, the application of this approach to the labour- power market⁷ revealed its shortcomings, calling into question the notion of efficient wages and with it the whole concept of human capital, especially its empirical conclusions about rates of return on investments for education, which - as noted by Fine - was enough to ensure that the theory of human capital was renounced by one of its most ardent supporters

Anyway, our theoretical perspective by any means negates the importance of phenomena dealt with under the slogan of human capital or relative achievements of the theory such as drawing attention to diversity - in our categories - of labour power, unlike the unidimensional concept of the factor "labour" or extending the field of study onto long-term (or even lifetime) earnings, as opposed to only the current wage. On the other hand, owing to the fundamental theoretical reasons we cannot remain, as amply documented throughout the book, uncritical to it.

II. 5. HUMAN CAPITAL THEORY AND POLICY

In terms of its practical relevance, even more important is *of human capital theory's applied character, which is well exemplified by the following case:*

In his oft-quoted Fifth Report to the Massachusetts Board of Education (1841), Horace Mann sought to popularize the idea that education had individual as well as collective economic benefits. This report became one of the most well-known of Mann's twelve reports to the board, though Mann himself worried that such an appeal would exacerbate the materialism that he hoped the common schools would combat. In 1841, however, the Massachusetts Board was

⁷ Although the use of such a common term as a "labour market" is, to all intents and purposes, inevitable, that term is incorrect, or even irrational. The commodity in question is a given employee's labour power, since her labour, firstly, constitutes an act that as such is inalienable, and, secondly, the said labour will come into being only at a later stage, after completing a labour contract, which is nothing other as a transaction involving the capacity to work, potential labour, or labour power.

under attack from opponents of a centralized school system, and Mann thought that by showing how schooling benefited the economy he might convince the board's opponents of the value of the state's investment in public education. Accordingly, he replaced his usual arguments about its moral and civic value with a demonstration of its monetary value to workers and manufacturers in the Commonwealth. Arguing that the key to prosperity was an educated populace, he even sought to calculate the rate of return to the state's investment in education by asking a small sample of Massachusetts businessmen to assess the difference in productivity between literate and illiterate workers.

Though Mann's argument about economic efficacy helped save the Board of Education, until the end of the nineteenth century most common-school promoters continued to prioritize the civic and moral purposes of education. Since then, however, those ideas have been eclipsed by ones like those Mann articulated in his Fifth Report, particularly about the school's role in the production of what we now call human capital. Arguments about the school's civic and moral purposes have not disappeared, of course. They appear regularly on political leaders' lists of desirable educational goals. But over the last hundred years those ideas have been increasingly subordinated to the notion that the primary purpose of education is to equip students with the skills they presumably need to improve their own economic opportunities and to make the nation more prosperous and secure.

This line of reasoning is well illustrated by the title of the title of Husbands' recent article: "Ranking universities on graduate job prospects is a step in the right direction" (2017). In it, the Vice Chancellor at Sheffield Hallam University refers to the new Teaching Excellence Framework (TEF), according to which the UK institutions of higher education are ranked. The system emphasises Things such as how likely students are to secure a highly skilled job as a result of their course.

In terms of evidence, it is based on the Longitudinal Education Outcomes (LEO) dataset that comprises administrative school records, university records and official reported taxable earnings. It is fair to say that this method of data collection has some merits too it as compared to the self-reported 'Destinations of Leavers from Higher Education' (DLHE) survey, which has all the usual problems of non-response that one gets with such surveys. Even more importantly, the DLHE data record earnings only six months and three years after graduation, i.e. before much of the earnings differences between institutions and subjects become apparent, the LEO dataset provides detailed and accurate information on earnings and employment for graduates throughout their early career by institution and subject.

For instance, "it shows that medical students and economists are the highest-earning graduates in the UK, with median earnings of £47,000 and £33,000 a year in their mid to late twenties respectively. Students studying creative arts, on the other hand, earn only about £20,000 a year on average. Subjects such as economics, business and law show very variable median earnings across institutions, while others – in particular medicine, veterinary science and nursing – do not. This suggests that subject choice matters a lot for future earnings, while institution choice is much more important in some fields than in others" (Britton 2017).

But recall, all that glitters is not gold; in other words, the aforementioned dataset, just like the entire human capital theory, raises a couple of issues.

First, students would be misled if they believe that the reported differences between subjects and institutions solely reflect the impact of a specific course. It is apparent that there are considerable differences between the types of students studying each course that may lead to differences in graduate earnings that are entirely independent of course quality.

To be fair, those who support the policy under consideration and/or human capital theory might argue that the purpose of the former consisting in encouraging universities to concentrate on improving graduate labour market outcomes is, after all, sound. There has long been an argument that universities do not have enough “skin in the game”, (Britton 2017) meaning that they have limited incentives to improve the outcomes of their graduates. Recent increases in university spending on facilities such as fancy halls of residence and nice gyms may suggest that their focus for attracting students is more on these factors than on teaching quality or labour market outcomes. Thus, it might seem, accurate data on graduate earnings that are readily available to prospective students may shift this skewed orientation. But the matter is not as simple as that; one drawback is that universities that have improved a lot recently may suffer as these data in effect reflect university quality from up to 10 years ago.

The most important concern, though, is that universities may focus too much on labour market outcomes rather than on education that serves wider purposes, such as nursing or the arts. More broadly, it could be argued that assessing universities through the prism of graduate employment ignores so much of the personal development that is, after all, central to higher education. Relatedly, responding to the aforementioned data, Nicola Dandridge, the chief executive of Universities UK, said that “graduate salaries are not the only measure of success in higher education” and added that “many students seek rewarding careers where high salaries are not their only motivation” (Baker 2017b).

Furthermore, increased such an over-emphasis on graduate earnings could also generate perverse incentives for universities: in particular, in the form of admission policies favouring those who are likely to have the highest earnings; that such policies could be very bad for access to universities for those from the disadvantaged social classes and estates.

To expand on the aforementioned criticisms, it could be argued that the sheer complexity of the data, and the endless caveats and explanations they throw up, arguably call into question the whole rationale of the said initiative: can policy really be formed on such raw statistics?

To begin with, let us examine the data alongside the main piece of contextual information provided with the release: graduates’ exam performance before going to university. Although while those contextual data only cover England and those who took A levels, they still demonstrate that there is a clear link between what is known as “prior attainment” and graduates’ later earnings, regardless of what university they went to.

But as well as showing this link, the data also allow a deeper analysis to identify examples of where a selective university’s graduates have earned less than might be expected and vice versa. LEO groups prior attainment for each subject area into three bands. Band 1 includes universities that admitted the top 25 per cent of A-level students.

Band 2 covers the middle half of institutions (a much wider band) in terms of A-level attainment and Band 3 is the bottom quarter. Comparing the median salaries after five years for each band with average earnings across all English universities does appear to reveal whose graduates entered higher education with lower grades but still went on to earn relatively high salaries. Conversely, it also shows the institutions whose graduates earned less than average despite leaving school with top grades. “In some subject areas such crossover rarely, or never, occurs: notable examples include law and finance-related subjects such as economics” (Baker 2017). The fact is that the analysis reveals a few universities that do break away from the prior dominant attainment trend especially some of those doing it repeatedly. For example, in six different subject areas London South Bank University produces graduates that earn more at the median than average despite admitting those with the lowest grades. On the opposite end of the

spectrum, Lancaster University has six subjects where its graduates earn less than average after five years, despite admitting those with the highest A-level grades.

Yet, contrary to what might seem at first sight, this kind of findings rather than corroborating the purposes of the policy under consideration, complicate the matter, and thereby the rational that could be put forward for the former, still further.

The thing is that such an overview compellingly points to the fundamental importance of such a factor as a North/South divide in the location of the universities. This issue is even more clearly apparent when looking at universities in Band 2 for computer science, where graduates earn above or below the upper and lower quartile earnings for the whole of England.

Thus, allowing for prior attainment in this way helps to highlight the point that there is another major factor influencing the figures: regional labour (labour-power) market differences.

True, they might not be able to explain away every university's performance. For instance, the University of Sheffield's median graduate salary falls under the average in four subjects, including in two science subject areas (mathematical and biological sciences) – more than any other northern Russell Group university⁸ – despite being a Band 1 institution.

But regional pay factors clearly play a considerable role and it demonstrates that any fair analysis of the LEO data as a measure of performance is difficult, if not impossible, especially given that there are also countless other factors one needs to take into consideration as well, SUCH AS the male-to-female ratio of graduates (more women in a subject area would skew the figures, given the evidence that there is a graduate gender pay gap), the types of courses within subject areas (for instance, social studies covers both vocational courses such as social work and degrees such as politics) and the fact that the figures do not include the self-employed.

For Anna Vignoles, professor of education at the University of Cambridge, who is working on a major project led by the Institute for Fiscal Studies to analyse the LEO data against a range of contextual factors, it is a forceful reminder that using graduate salary data to measure teaching quality is seriously problematic.

Most topically, this raises questions about how they could be used in England's teaching excellence framework (while not part of the TEF this year, LEO is set to inform the Higher Education Statistics Agency's new-look Destinations of Leavers from Higher Education survey, which feeds into the TEF).

"[LEO] shows that there is a relatively high correlation between prior attainment and eventual earnings...and so [these data] may not be a measure of teaching or university quality in any way," Professor Vignoles said" (Baker 2017).

"The aforementioned expert added that: "you wouldn't want to use it as a simple metric to judge institution quality on the TEF" (Baker 2017), which is as devastating a critique of the current British government as one can get.

Even an author of an otherwise enthusiastic article on The UK government's recently published Longitudinal Education Outcomes project had to concede that this "big data approach to the supposed correlation between school attainment and earnings showed that the latter "varies between subjects. In subjects such as business, law, English and history, those who attend the most selective institutions have the highest earnings – but that correlation was weaker in some science subjects, where there are greater numbers of graduates from less selective universities on the higher end of the salary scale" (Britton 2017).

⁸ These are high-status public sector universities).

To round off the present chapter, the reader could be forgiven for believing that human capital theory is popular overseas only. Meanwhile, "Poland's Ministry of Science and Higher Education has assembled extensive data to help prospective students choose courses that offer the best employment prospects.

The information comes from a survey of more than 360,000 graduates developed by scientists from the University of Warsaw and staff of the National Information Processing Institute. This was carried out between January 2015 and September 2016 and focuses on the length of graduates' job searches, their chances of unemployment, employers and levels of remuneration" (Reisz 2017).

II. 6. MEASUREMENT OF HUMAN CAPITAL

"At a macroeconomic level, the literature has focussed on the proposal of aggregated measures of human capital stock for an economy which would permit intertemporal and/or interregional comparisons" (Arrazola, Chiavi 2007). However, as the economist cited admit, "These indicators usually exclusively capture the component associated with investments in regulated training, ignoring others like the learning acquired through other training routes or from job experience.

In the microeconomic context, it has been considered that the human capital of individuals is constituted by various components like, for instance, their educational level and their work experience".

It may be noted that "human capital measurement grew out of a science developed in the 1960s called human resource accounting. Among the thinkers who established this new field are Rensis Likert, Theodore Schultz, and Eric Flamholtz. Flamholtz's book, *Human Resource Accounting*, first published in 1974 and now in its third edition, is a standard reference for those seeking to understand the topic. Flamholtz introduced the idea that employees contribute more to the organisation than their salary and benefits" (Bukowitz et al. 2004), which idea makes strange bedfellows with the well-known notion of surplus value, otherwise belonging in a quite different tradition.

However, "In spite of the interest in having a single and homogeneous measure of the human capital of individuals to make interpersonal comparisons or to analyse the relevance of human capital in different economic areas like wage determination, productivity analysis, etc., the literature on this subject is sparse" (Arrozola, Chiavi 2007).

The under-development of measures of human capital as official statistics arises from several factors. First and foremost, there is still no consensus on the concept, e.g. as regards an extent to which non-economic aspects of human capital be incorporated into it. Similarly, there is still no universal agreement on how the economic dimension of human capital should be measured. A further problem is that of levels of measurement. Given that human capital is more difficult to measure than physical capital, it has to be measured by indirect means. This implies a range of methodological and conceptual issues and challenges. Finally, "this work requires expertise, knowledge and skills in numerous fields including the system of national accounts, productivity/economic growth, labour/education economics" (Hui 1985).

In the case of money capital, and what is called physical capital the question of measuring their magnitude is straightforward. The same should hold with reference to human capital, as it is held to be the same sort of capital as others. In reality, however, the matter is anything but

simple. And experts in the field are perfectly aware of that fact; “Among these ‘intangible assets’ [...] the most important is human capital, the ability of employees to do the things that ultimately make the company work and succeed.

Hard to define, and even harder to measure, intangible assets are becoming increasingly essential to the success of many organisations in the 21st century”. (Bates 2003). But putting forward such an idea is by any means the same thing as taking it on board in practice: Every company has employees. But not every company understands their contribution to the bottom line or knows how to manage them to drive even better financial results, even though they account for as much as 80 percent of the worth of a corporation.

“I can put a value on everything in my office: my clock, my desk. But I can’t put a value on people”, says Jac Fitzenz, founder and chairman of the Saratoga Institute, a human capital management consulting firm in Santa Clara, Calif (Bates 2002), calling thus into question such optimistic estimates of the worth of human capital as mentioned above; “HR analysts and corporate consultant persist in their hope for discovering the “‘Holy Grail’ of organisational measurement: calculating with confidence the return on investment (ROI) of individual employees.

They hope to determine who is generating how much profit per dollar of company investment in salary, benefits and training—and why—to make the best use of their human capital. [...] Companies are committing substantial resources to measurement initiatives. But even some of the largest organisations, with highly paid in-house experts, are struggling. In a packed conference room earlier this year, representatives of several big corporations told members of the Society for Industrial and Organisational Psychology about undertaking metrics initiatives with great hopes—and at great expense—only to step back and reconsider what they were doing, how they should continue and even if they should continue.

‘We’re continuing to struggle with it’, admitted an HR leader with one Fortune 500 corporation. Another conceded: ‘We still don’t know how to measure some things’” (Bates 2003). Not only practitioners, but also theorists concede that “The analysis of human capital is still fraught [with] difficulties like measurement and quantification” (Viswanath et al. 2008). And even those working within the human capital tradition eventually do reach the conclusion that the ultimate reason for those measurement problems is the incongruity of usual types of capital and this alleged capital: “Calculating the value of human capital (HC) is not easy—because human capital is not like other capital. With rare exception, HC simultaneously represents the single greatest potential asset and the single greatest potential liability that an organisation will acquire as it goes about its business. While there are other intangible assets, HC is the only intangible asset that can be influenced, but never completely controlled, invested in wisely, or wasted thoughtlessly, and still have tremendous value. These distinguishing features are what make HC unique, and also what makes it an elusive asset.

[...] Although we would agree that most CEOs are acutely aware of their investments in their most valuable asset (salaries, benefits, training, recruitment programmes and the like), almost none could tell you what their most valuable asset is worth” (Weatherly 2003).

And not without reason, as few methods of measurement available show. “According to economic theory, the value of an asset to a firm lies in the rate of return to be derived by the firm from its employment, Lev and Schwartz model surrogated wages and salaries of the employees for the income to be derived from their employment. They felt that income generated by the workforce is very difficult to measure because income is the result of group efforts of all factors of production” (Bates 2002). It is very well that the authors of the method proposed are aware of this basic fact of interconnectedness of all productive forces, but their solution is an

escape hatch, which does not solve anything. Costs and profits are very different concepts and magnitudes. Likewise, the following proposal refers simply to labour, or more precisely, labour power costs, which is not altered by an arbitrary attempt to include them into the rubric of human capital. “Most knowledge-intensive organisations recognise that their source of competitive advantage comes from human capital. Yet few reliable metrics exist for measuring its value. A new metric draws on actuarial principles and replacement cost to estimate the expected economic contribution of individuals to an organisation. The metric begins with an employee’s wages plus benefits and then incorporates a series of additional costs: separation and sourcing costs; job vacancy costs; learning curve opportunity costs; and new hire risk costs. Factors such as employee tenure and age are also considered. The metric has many potential applications, from sizing retention bonuses for individuals to estimating a minimum return on people for an entire business segment” (Bukowitz 2008).

Following are some of the specific limitations of Lev and Schwartz Model mentioned above:

1. This model doesn’t suggest how value of human resource should be recorded in Books of Accounts.
2. This model takes wages & salary as a basis of value of human resource but value of human resource is not limited only to the extent of cost incurred on them .It is different from traditional fixed assets .It has greater value than cost incurred.
3. It ignores the probability that people may make role changes during the career. For example Assistant Manager will not remain in the same position throughout his expected service life in an organisation.
4. The Model ignores the possibility and probability that individual may leave an organisation for reasons other than death or retirement. The model’s expected value of human capital is actually a measure of expected ‘conditional value’ of a person’s human capital-The implicit condition is that the person will remain in organisation until death or retirement. This assumption is not practical. (TIWARI).
5. Finally, a person’s value to organisation is determined not only by the characteristics of the person herself (as suggested by Lev and Schwartz), but also by the organisational role in which the individual is utilized. Depending on this organisational division of labour, and by the same token factors uncontrolled by and independent of the individual in question, her knowledge and skill is valuable only if these are expected to serve as a means to given organisational ends.

A method of measurement based on other assumptions is not devoid of its problems as well. for an individual with S years of studies and t years of experience, Portela (2001) suggests calculating the following human capital indicator:

$$(HCP_t = S \sigma_S + t \sigma_t + A$$

where: S is the mean population level of schooling, t is the mean population level of experience for each schooling level, and σ_S and σ_t are, respectively, the standard deviations of education and of experience per educational level.

The advantage of the Portela proposal is its simplicity, but it poses three problems. Firstly, it lacks any reference to a theoretical framework, since it is generated in an *ad hoc* manner imposing a modified logistic function for the distribution of human capital components. Next,

“the aggregation of human capital components proposed does not take into account the different economic returns that each of those components might have. Thirdly, it does not contemplate the depreciation to which human capital is subjected and which makes, for instance, individuals with a same educational level have a different effective endowment of capital because they have carried out their studies at different moments in time” (Arrozola, Chiavi 2007).

But the fact of being aware of at least some of those problems does not automatically causes one to be able to cope with the problems involved effectively. To take just one, albeit crucial for human capital theory, field of higher education, even human capital scholars frankly admit that it suffers from the lack of a generally accepted standard for judging the human capital instilled by higher education.

Placement rates and starting salaries of graduates have been suggested as proxies for output, but there are several problems with this approach. Because the raw material input, students, self-select schools rather than being assigned randomly to them, placement and salary differences can not be attributed directly to the production process itself. Then, too, there are significant cost and reliability problems involved in gathering such information. Life-time earnings are arguably a more important measure than initial placement and starting salaries. But, using life-time earnings is difficult because of the possibility of enhancements to human capital beyond higher education, the possibility of changes in the make-up of the faculty in the interim, and problems of data collection and its expense. [...] Last, but not least, not all enhancements to students’ human capital are marketable, some being for consumptive purposes. The greater the extent of non-marketable enhancements, the less accurately salaries measure them. (Forbes, Paul 1991)

Let us overview in a more systematic way basic methods used in the area under investigation. Broadly speaking, there are three main approaches to Compute human capital: the cost-based approach, output approach, and labour-income based approach.

1. Cost-based Approach

As the name suggests, this input-based approach estimates the stock of human capital by aggregating the depreciated value of cumulative total investment towards human capital formation, including investment in education and health; the opportunity cost of attending school is also accounted for. It must be noted however that this approach is particularly “sensitive to the rate of depreciation used. Moreover, the distinction between consumption and investment also adds an element of subjectivity to the estimation” (Sabir, Aftab 2006).

The list of criticisms against the above method may be extended. The issue of so-called opportunity costs has been already critically examined above. The aforementioned distinction between investment and consumption, however, refers, on the one hand, to those aspects of personality that are essential for work and those ones which are involved in quasi-work, and whose inclusion into the concept of human capital needs to be separately justified. To be more precise, in our humble opinion such a choice is impossible to substantiate, and is yet another manifestation of the concept’s over-inclusiveness, as is shown, e.g., by the following contention: “Human capital plays an important role in market activities as well as in non-market activities. Education does not only have a positive effect on labour productivity and hence on labour market earnings - it also helps improve the overall ability to undertake non-market activities and enrich personal lives. These non-economic returns to education are no less important as they impact on market labour activities and the economic success of both individuals and

nations. Accordingly, human capital can be either defined as “... relevant to economic activities” [OECD 1988: 9], or as this kind of factor that “... facilitates the creation of personal, social and economic well-being” (OECD 2001: 18).

In our framework of socio-economic structuralism labour power is distinguished from quasi-labour power, i.e. those personality attributes that are the prerequisite of non-commercial activities.

When, however, one seeks to combine both those aspects under a single umbrella concept, the consequences may be rather odd, not to say funny:

There are many other forms of returns to human capital, such as the values created in unpaid household production and, potentially, leisure. How to value non-market labour activities is a contentious issue. Jorgenson and Fraumeni adopt the concept of full income including non-market income as well as market income. The non-market income is based on imputations to leisure time. The after-tax wage rates are used to impute the incomes of leisure time. This choice attracts understandable criticism. For example, is it appropriate to value a PhD holder’s work in the garden at a higher rate than that for someone who only completed secondary education? (Hui 1985)

From our vantage point, however, it is precisely differentia specifica of quasi-work that it generates no income, as opposed to labour whose concept implies it is a source of means of subsistence.

It may be considered as yet another manifestation of the illness of confusion plaguing human capital theory that its exponents apparently do not see any contradiction between such delineation of the bounds of the concept under investigation and contentions to the effect that “It is assumed that all individuals retire at age 75 and have no labour income and therefore zero human capital” (Hui 1985).

A retired person does not lose his or her ability to perform household chores, read books, attending universities of the third age, etc, after all. What is more, retirement does not exclude taking another job either.

Furthermore, the matter is not made any clearer by the divergences among the human capital writers as to what constitutes the content of the concept of human capital, or, alternatively, target of human investment. This rather fundamental disagreement concerns, for instance, the role of health (or health expenditures). As opposed to the above-mentioned pronouncement, the following economists treat as a component of human capital only “education investments”, not “health investments”, they are concerned with “investigating household decisions on health investment, human capital investment, and life cycle savings” (Tang, Zhen 2007).

2. Output-based Approach

This approach uses outcome indicators relevant to human capital formation. The most common measures used in the literature are adult literacy, school enrollment rates, and average years of formal schooling. Although the aforementioned measures are based on easily available data, thereby making cross-country comparisons possible, they emphasize quantity rather than the quality of education. In point of fact “the quality of education is assumed to be constant across regions and over time” (Sabir, Aftab 2006), which is, of course, untenable. In effect, one compares apples and oranges, pretending that they all are apples. Overall, the approach based on years of formal schooling, used, e.g., in the well-known Mincer earnings function, is a crude

tool of misestimation rather than estimation of human capital. The same refers to another measure popular in the literature. Many theoretical models of economic growth have used the schooling enrolment rates (SERs) as proxy variables for human capital. [...] Schooling enrolment ratios have several deficiencies as measure of stock of human capital. First, the current enrolment ratios measures the flows of schooling, the cumulation of these flows creates the future stocks of human capital. Because the educational process takes many years, the lag between flows and stock is very long. If the approximate lag is considered, then the construction of human capital stocks still requires an estimate of initial stocks. Errors are introduced because of mortality and migration and because the net enrolment ratios are unavailable for developing countries. The gross enrolment ratio introduces errors related to Repetition of grades and drop-outs, phenomena that are typically high in developing countries. (Abbas 2000)

Another problem may be that the underlying data on schooling enrolment are doubtful quality for developing countries. Most information collected by UNESCO comes from annual surveys of educational institutions in each country. The typical practice is that the person responsible for administering each institution answers a number of questions about his or her institution.

Chapman and Brothroyed (1988) note that in several countries headmasters have been observed to inflate the reported enrolment based on their experience that higher enrolment figures lead to more resource supplies, textbooks, and budget allocated to the school. Thus, in general, the reported enrolment may an upward bias. An additional source of upward bias may be that the data refer to the registered number of students at the beginning of each school year. The actual number of children that attend the school during the year can be substantially lower. The error is particularly serious for developing countries in which government punishes parents that do not register their children at primary schools.

3. Labour-income-based Approach

In order to address the quality issue Mulligan and Sala-i-Martin (1997) developed a labour-income-based measure of human capital.

The measure is based on the assumption that the aggregate level of output is determined by an aggregate production function that depends on two inputs: the total human capital H and total nonhuman capital K in the economy.

$$[Q.sub.t] = F([v.sub.t] [K.sub.t], [u.sub.t] [H.sub.t]) \dots \dots \dots \dots \dots \dots (1)$$

v is the fraction of nonhuman capital devoted to productive activities and u is the labour participation rate. Since the labour force is heterogeneous and different people contribute to production in different degrees based on their education and skills, the measure of human capital gives a larger weight to those people who are more productive. To capture this phenomenon the proposed measure of the average stock of human capital in an economy is the quality-adjusted sum of the labour of its citizens

$$[[\bar{H}].sub.ijt] [\int] [\int] [[\theta].sub.ij] [(t, s, a)[[\eta].sub.ij] (t, s, a) da ds \dots (2)$$

[where] $[[\eta].sub.ij](t, s, a) = [N.sub.ij](t, s, a)/[N.sub.ij](t)$ indicates the proportion of individuals in sector i , and region j with “ s ” years of schooling, and “ a ” years of age, and

$[\theta]_{\psi}$ (t. s. a) is an efficiency parameter, indicating the contribution of each individual to the stock of human capital.

The real challenge is to determine an adequate measure of this efficiency parameter. To determine the nature of the efficiency parameter, the authors assume that individuals acquire human capital through the combination of some aggregate inputs, such as the stock of physical and human capital devoted to education, and their own time and skills. Since the human and physical content of education may vary across economies and over time, a given number of years of schooling may reflect different amounts of human capital. The authors' intuition is that the quality of an individual's human capital is related to the wage rate received in the marketplace. If his/her education is particularly useful, the market will reward him/her with a higher wage. (Sabir, Aftab 2006)

The assumption, common in orthodox economics, that the higher human capital, the higher the productivity, which, in turn, is reflected in higher earnings is, again, over-simplified. In modern conditions in only rare cases output of individual workers can be directly measured; in an overwhelming number of cases it is dependent on a host of factors, including other workers and employees' labour.

The basic distinction to be noted is that between, on the one hand, collective and individual, and, on the other, achievement-based and ascriptive labour power mentioned above. This implies, amongst other consequences, that the rose-tainted account of the above indicator of human capital does not take account of sex, age, or race discrimination which ascriptive traits of labour power more often than not have no bearing on individual productivity.

An interesting example of an explanation that ends up pointing to this kind of factors as a reason of income differentials is provided by Yang (2005) who, till the very end, sticks to the strategy of post hoc explanation: if some factor not taken account of by the conventional human capital theory is found to account for given income disparities, let us simply treat it as yet another element of human capital; which by the same token turns out to be an irrefutable explanation. Yang admits that "data analyses indicate that classical human capital indicators such as education, job training, and work experiences are not sufficient to account for the observed income gap between Hispanics and Caucasians. Instead, English fluency is a highly valuable aspect of human capital for Hispanic workers. English non-fluency, along with less education, job training, and work experiences explain why Hispanic workers earn less than Caucasian workers". The seeming challenge to human capital theory disappears immediately when one asserts that "speaking the majority language can be considered as an integral component of workers' human capital".

This strategy, known at least since the so-called epicycles of the Ptolemaic system of astronomy, falters, though, in the face of some awkward facts.

However, "variations in English fluency do not affect the incomes of Asian workers. Those findings suggest that English non-fluency is a unique source of income penalty for Hispanic workers. It may be attributed to stereotyping by employers" (Yang 2005).

The authors cited above also assume that the stock of human capital of an individual with no schooling is identical always and everywhere. This assumption does not imply, however, that the productivity of zero schooling individuals is identical always and everywhere. Zero-schooling individuals' income will vary according to an economy's aggregate stock of physical and human capital as well as due to other inputs. This assumption is used to define a numeraire that enables the authors to express the human capital index in a unit that is homogenous across

space and time. According to the authors, since any amount of schooling introduces inter-temporal and interregional differences in an individual's level of skills, the only sensible numeraire is the zero-schooling worker.

Under the assumption that a worker's marginal product is equal to his wage,⁹ the human capital of a worker with "s" years of schooling and "a" years of age can be inferred from the wage ratio:

$$[\theta]_{s,a}(t) = [w]_{s,a}(t) / [w]_{0,10-14}(t) \dots \dots \dots (3)$$

$w_{0,10-14}(t)$ = wage rate of a person with zero year of schooling and 10-14 years of age.
 $w_{s,a}(t)$ = wage rate of a person with s years of schooling and age between 10-70 years.

The worker with zero schooling and 10-14 years of age is used as a numeraire to allow the human capital index to be expressed in a unit that is homogenous across "space and time". (Sabir, Aftab 2006)

However, the aforementioned author admits himself that "a major limitation of the above efficiency measure, however, is that wages may change for reasons other than changes in human capital".

If value of $[\theta]$ from (3) is substituted in (2) than the average stock of human capital in a given economy is measured as:

$$[\bar{H}]_{s,a} = \int \int [W]_{s,a}(t) / [W]_{0,10-14}(t) [\eta]_{s,a} dt ds \dots \dots \dots (4)$$

The above equation is similar to the Equation (ii), however the only difference is the replacement of $[\theta]$ with relative wage rates. The wage rate of a zero-skilled worker is estimated by taking the exponential of the constant term from a Mincer wage regression. Similarly, respective wage rates of other workers are estimated by taking the exponential of the sum of the constant term and other coefficients from a Mincer wage regression after multiplying with the respective values of the variables. Mulligan and Sala-i-Martin's (1997) measure of human capital has the advantage of capturing the variation in quality and relevance of schooling across regions and over time. This approach nets out the effect of aggregate physical capital on labour income by dividing an individual's wage rate by the wage of a zero-schooling worker. Moreover, this approach allows the elasticity of substitution across workers to vary. However, this measure also has some drawbacks. First, zero-schooling individuals are assumed to be identical across regions and over time and assumed to be perfect substitutes for the remaining workers

⁹ Of course, what human capital analyst take for granted, following in the footsteps of conventional orthodox economics, is called into question even by many economists themselves who argue that "market imperfections, monopoly and labour unions in particular, drive a wedge between marginal products and wages" (Bowles, Gintis 1975). The supposed relationship between workers' marginal productivity and wages cannot obtain if the firm discriminates against women, ethnic minorities, etc., which is a common practice, at least in the U. S., as is evidenced by a survey according to which "Nearly 60% of the study sample (N=5585) reported job discrimination (race, nationality, sex, or age) between 1979 and 1982" (Coputo 2002).

in the labour force. Second, wages may vary for reasons other than changes in the marginal value of human capital. For instance, fiscal or monetary shocks may be the cause of changes in relative wages, which are, although unrelated, interpreted as changes in the marginal value of human capital. (Sabir, Aftab 2006)

And when one delves deeper into the issue of differences between capital in the normal sense of the word and human capital, it turns out that one cannot but refer to a variety of characteristics of labour power: “Human capital can be developed and cultivated, but it can also decide to leave the organisation, become sick, disheartened, and even influence others to behave in a way that may not be to the advantage of an employer, thus usurping or siphoning off resources intended for use elsewhere in the organisation. In other words, the performance of an organisation’s human capital is not always predictable and/or within the control of the employer” (Weatherly 2003).

What this reveals is the creation by human capital theory of a strange entity named “capital” that can go on strike, go astray, go to hospital, etc.

Even the over-zealous proponents of human capital theory who derive from it some far-reaching conclusions and proposals, are forced to acknowledge that the problems with measuring this kind of capital are insurmountable: Ownership is the right to an asset’s residual returns and to control over the asset. Blair argues that stockholders are not a corporation’s sole residual claimants and therefore should not be deemed its sole owners and granted exclusive control. Because many employees embody firm-specific human capital, they too are rewarded with a share of the firm’s residual returns. Blair’s argument that workers should be given a share of control and perhaps of equity ultimately falters on the impossibility of measuring firm-specific human capital, the difficulty of devising effective means of governance to maximize returns to diverse constituencies, and the existence of alternative ways of compensating workers for their firm-specific human capital [...] as she admits, economists have yet to devise a reliable measure of firm-specific human capital. Since (as Blair acknowledges) workers are compensated for their general skills by their contractual pay and benefits, the inability separately to measure firm-specific skills undermines her claim that appropriate shares in residual returns and control, commensurate with firm-specific skills, can be determined. Financial capital is homogeneous and quantifiable, so it is simple to apportion both votes and dividend and liquidation rights among stockholders. Human capital, by contrast, is difficult to measure, diverse, and often not attributable to any particular employee or group of employees.

The inability to measure firm-specific human capital suggests that negotiated compensation in a competitive labour market is the best measure of an employee’s value to the firm. (Chandrasekhar 1996)

In other words, as we are stressing throughout the book, human capital appears to be labour power, even in the eyes of its most avowed advocates; wage negotiations, collective bargaining, trade unions, and the like are inextricably connected with the labour side of the equation: capital-labour power, after all.

Finally, it may be expected that despite the intrinsic problems with its quantification, some more exact and, equally important, widely accepted, methods of measuring it will be put forth in the years to come, which will be necessitated by pragmatic considerations, as evidenced by what follows: Private-sector research on return on investment in human capital includes a definitive study by Mark Huselid. It concludes that the share price of companies with “high-commitment work practices”—including pay and promotion based on performance—is \$18,000 per employee higher than organisations without those practices. Huselid’s more recent

study, published in *The Academy of Management Journal*, shows even greater wealth creation...\$41,000 per employee higher than companies without these practices.

Research published by McKinsey & Company and Sibson & Company in 1998 shows that firms with better talent at the top have a 70-percent-higher total return to shareholders. Companies with top quintile shareholder returns over a 10-year period (averaging 22 percent) had more consistent, responsive talent management practices than companies in the mid-quartile (13 percent). The study concludes that there is, and will be for some time, a “war for talent” to attract and retain the most capable employees. (Evans et al. 2000).

This does not square with the following facts, however: Meanwhile, if people are a company’s biggest asset, why don’t Wall Street analysts pay more attention to them? What makes a company a blue chip investment? For most business leaders, it’s really not much of a secret. From GE’s former CEO Jack Welch to consultant Jim Collins, the message is clear: It’s the value of the people and what they do. In fact, a variety of experts agree that as much as 80 percent of a company’s worth is tied to human capital.

Somewhere along the line, however, most of Wall Street’s stock analysts didn’t get the memo. Because when analysts evaluate the potential worth of a company’s stock—a move that can lure investors or send them running in the other direction, with resultant effects on a company’s stock price—human capital plays at best a bit part. Some don’t agree. “With respect to the value of human capital, [...] whereas in 1980 the ratio of the market value to the book value for the typical firm in the S&P 500 was about 1.2, at the end of 1998 its market value was three times its book value. Additionally, for firms listed on the NYSE, the market to book ratio has risen from about 1.1 to over 2.0 in the same period. These two pieces of evidence imply that human capital represents between one half and two thirds of the value of the typical firm. (Ortega et al. 2004)

This kind of argument begs the question; it without any justification assumes that the reported disproportionate increase in the market value can be generated by the elusive corporate human capital. Meanwhile, contrary to Ortega’s argument, it is well-known that stock markets are not efficient, which in plain English means that they are not rational. There is no mathematical formula by which to calculate stock prices which are driven by a plethora of psychological, irrational drives, moods and sentiments. It is primarily on that basis that equity markets go through rationally incomprehensible ups and downs. This brings us neatly to the case referred to in the above example.

Shortly thereafter the so-called dotcom bubble composed without exception of companies which one would call exemplary human capital firms went to an abrupt close, eradicating billions of paper wealth built largely on human capital foundations.

The author cited above asks further: So why are analysts missing what everyone else seems to intuitively understand? There are a number of reasons, some more valid than others. For example, some point to “the absence of universally accepted metrics for numerically capturing the value of an organisation’s human capital” (Grossman 2005).

Similarly, another scholar admits that the central dilemma facing firms is the dearth of evidence that training creates value for organisations. Unlike research and development expenditures, firms are not required to regularly report training investments to shareholders. [...] Current Generally Accepted Accounting Principles (GAAP) in the United States treat training as a cost—and a hidden one at that. Certainly the absence of knowledge capital in general, and human capital in particular, from the standards included under GAAP made sense in the industrial era. Most, if not all, forms of knowledge capital are extraordinarily difficult areas in which

to attempt to place a dollar value, and in most cases, such areas were not central to an industrial-era business. Human capital has always presented additional difficulties, owing in part to its unique status as the one field in which the firm does not own the asset in which the investment is being made. In the field of business accounting and financial reporting in the United States, institutions like the Federal Accounting Standards Board (FASB) and the Securities and Exchange Commission (SEC) carry enormous weight in determining how expenditures are measured and reported by organisations.

Although both organisations have given some consideration to new standards or requirements in areas like human capital, significant changes are made slowly and often reluctantly, and neither has yet moved for more significant public disclosure of knowledge-related capital generally. Thus, organisations that adhere to FASB Guidelines (and this includes basically all U.S. publicly-traded companies) do not include training as an investment in their standard accounting—even if they are one of the rare organisations that truly does try to manage training purely as an investment. Organisations have strong incentives to report publicly only that information that they are required to report, as they are liable to shareholders for the accuracy of all financial information that is publicly released.

As a result, they are extremely reluctant to expand that liability beyond the minimum core of information that they are already required to make public.

This factor, combined with the accounting treatment of training as a cost, has made it extremely rare for any organisation to ever make public any meaningful information on its training investments or practices. (Ortega et al. 2004)

Indeed, a study (O'Connor 1998) using the 1996 annual reports of all Fortune 500 companies found that not a single organisation released meaningful information on its training expenditures, and the number that released any information on training time could be counted on one hand. Similarly, an extensive Nexis search for organisations that have made any public statements about their training expenditures located not a single example. ASTD reports that the most frequent query from potential respondents in their data collection is whether such information will be kept confidential. “Clearly, organisations don’t believe that there’s currently any reward at all for making such information public—in part, this is likely because training is officially an expenditure, and market pressures are to reduce costs, especially hidden ones. If there are positive effects of training investments, it is currently impossible for market incentives to encourage such investments.

Firms that are interested in measuring their training investments (even in the absence of any requirements to do so) confront a number of fundamental measurement problems. The systems that firms use to track their expenditures and investments on materials and capital are inadequate for reliably measuring which employees have received training, and the type and intensity of that training. Complicating matters is that much of this training may occur in a highly decentralised manner, so that line-item expenditures for training are typically absent from a firm’s books. In the absence of reliable information about firm training investments, therefore, it is not surprising that neither firms nor analysts have a good sense for how such investments affect future profitability” (Buren 2002).

What is remarkable is that the author writing in the tradition of human capital points out how normal capital investments differ from what is called within that tradition human capital investments. One may indeed infer from his argument that the most important reason for the divergence between self-serving estimates of human capital practitioners and not so keen on this purported new variety of capital stock market analysts is the prosaic fact that human capital

is not capital at all. And what it actually is, the same economist reveals in his contention that “investments in training and learning are almost surely lower than what would occur in a world in which firms (and investors) had full information about the amount of the firm’s training and its effects on the bottom line.

This information problem is not, of course, the only potential Impediment to firm training investments. Unlike investments in physical capital, the firm does not own the underlying asset (the employee him or herself) in which it needs to invest. As a result, a human asset can walk out the door at any time, which also creates some understandable reluctance for firms to make significant investments in training” (Buren 2005).

This is very true indeed. It is precisely for this reason that, as argued in the present book, the firm does not purchase its employees’ labour power, but only acquires a temporal lease. And the traits pointed out by the scholar cited above are precisely those that are unique to human labour power; one could not possibly imagine any capital that out of its own will would choose to change its employer. Such a decision can be taken by the bearers of labour power only.

Owing to the above-discussed considerations we remain sceptical toward the two Hr consultants’ claims that they are able to quantify the effects of specific HR practices on returns to corporate shareholders. To their minds “companies seeking to maximize shareholder value must focus on the following:

1. Achieving recruiting and retention excellence
2. Creating a total reward and accountability orientation
3. Establishing a collegial, flexible workplace
4. Opening up communication between management and employees
5. Implementing focused HR technology From recruiting to retention to compensation to leadership, Pfau and Kay show companies what works—and what doesn’t - when it comes to leveraging human capital to improve their bottom lines.

Companies that adopt and combine a select set of HR practices can experience up to a 47 percent jump in shareholder value. To put this in perspective,” Pfau says, “picture two \$1 billion companies that are highly similar in terms of research and development levels, industry and capital structure, but very different in terms of human capital management strategies. The difference in market value between the two companies can be as much as \$400 million to \$500 million, based solely on variations in human capital management practices, such as stock options, work arrangements and appropriate use of HR technologies” (Pfau, Kay 2002).

The credibility of these arithmetic calculations is questionable, but regardless of this, even more significant is the observation that the advices offered do not even use any human capital language whatsoever, presenting a rather standard tool kit based on common sense for whose construction human capital theory is entirely unnecessary, which is consistent with our insights presented elsewhere in the book.

II. 7. PRIVATE RETURNS TO HUMAN CAPITAL.

The former chapter ends with observations on the tacit reference of human capital theory to an alternative notion which, as is argued throughout the book, provides a more useful analytical framework within which to consider issues with which human capital approach is concerned. This tacit admission goes even further, extending into the rent theory of ownership, as

shown by what follows directly below: “Becker’s work led to the prediction that firms would only pay for training that would not be of use to workers if they moved to another company. If correct, this would also result in a sub-optimal level of training, since most workers are likely to be unable to meet their other training needs—so-called “general” skills training—without assistance from their employer (either because of lack of time outside work, or money, or both). In particular, workers may be unable to finance investments in their own general training because they typically cannot borrow from future earnings. In principle, they might be able to overcome this problem by accepting “training wages” below their marginal value product, thereby compensating the firm for training expenditures through the lower wages, but in practice this is often complicated by existing laws (e.g., minimum wage).

There is significant evidence, however, that firms bear the costs of a good deal of training for workers, often including general skills training. Evidence suggests that this maybe explained in part by labour market frictions, which may cause a widening gap between the marginal value product of workers and their wages as workers’ skill increases (Acemoglu and Pischke, 1999). A number of researchers have examined the effects of such workplace training. Bartel (2000) presents one of the first attempts to estimate the effects of private training on productivity using firm-level data, making use of a 1986 sample of 495 manufacturing firms. The key explanatory variable of interest in her analysis is an indicator for whether the firm provides any formal training to employees (but not the actual amount spent on training). She finds that the provision of training programmes between 1983 and 1986 is positively correlated with firms’ 1986 sales per employee.

Holzer (1996) analyse data for 157 manufacturing firms in the United States that had applied for state subsidies to support private training programmes. They find that receipt of a training subsidy increases training hours within a firm by a factor of two to three in the short term, and reduces output “scrap rates” by around 13 per cent (corresponding to a savings of between \$30,000 and \$50,000 per year). The survey does not identify the training costs actually borne (invested) by the firm.

Black and Lynch (1996) analyse data from the United States National Center on the Educational Quality of the Workforce (EQW)’s national 1994 telephone survey of 2,945 private firms with more than 20 employees. Black and Lynch find that the log of the number (or proportion) of workers who are trained in either 1990 or 1993 does not have a statistically significant correlation with the log of the firm’s 1993 sales for either manufacturing or non-manufacturing firms. The provision of computer training has a positive, statistically significant correlation with sales for non-manufacturing firms, but not for manufacturing establishments. Interpretation of these estimates, however, is complicated by the cross-sectional survey structure, which limits the authors’ ability to control for unmeasured firm characteristics.

Recent research by Hansson (2001), examining a Swedish firm, finds that employers are willing to finance, and able to extract the rents from, general human capital investments for their employees. Examining the market pricing of knowledge-based firms, the author also finds that human-capital intensive firms experience higher risk-adjusted market returns than firms with more traditional assets and investments (which are more fully accounted for and reported in the existing accounting system). His findings suggest that “lack of information about human capital investments results in an underestimation of future earnings and returns” (Buren 2002).

Doran (2004) invents a new form of human capital, only to derive conclusions which tell quite different story. “Because workers would be expected to receive some of the rents from the long-term attachment between firm and worker, the theories predict upward-sloping wage

profiles with job tenure. Tests of the theory under consideration have concentrated on estimating worker wage returns to tenure. Some studies (e.g., Abraham and Farber 1987; Altonji and Shakotko 1987) found negligible effects on wage growth, while others (Topel 1991; Parent 1999) find more substantial returns. Studies that have attempted to measure firm-specific training directly (Brown 1989; Parent 1999) found significant positive wage responses.

Another line of research examined the impact of permanent layoffs on subsequent wages. These studies (Hamermesh 1987; Addison and Portugal 1989; Topel 1991; Jacobson, La Londe, and Sullivan 1993) have found substantial wage losses associated with exogenous disruptions of the firm-worker match, although some of the loss may be industry specific and not firm specific (Neal 1995).

Although the models explaining long-term attachments between the firm and the worker typically suggest that the firm and the worker share in the rents from the match, few studies have explored the link between long-term attachments and firm profitability. The most common approach has been to examine the link between firm-provided training and measures of firm performance.

Bartel's (2000) review reports that, of the five cross-sectional studies that examined whether training can explain variation in measures of firm output, two found no effect and three found positive effects. A sixth study found mixed effects of individual training measures on productivity. It is, however, important to note that "these studies do not directly address the issue of firm returns to long-term attachments. First, firm returns are typically measured in terms of output rather than profit.

This makes it difficult to distinguish firm returns from worker returns because training would raise labour productivity even if workers were getting all the returns to training. Second, training may not capture variation in long-term worker attachment to firms. Training is typically measured by expenditures over one year or less. Consequently, the stock of human capital is not measured, but rather the increment to the stock.

In addition, labour turnover may be influenced by many factors other than measured training including benefits packages, compensating differentials, and informal training. While training may be an indicator of long-term attachments, it is not necessarily the only indicator" (Bates 2003).¹⁰

Previous studies have used the persistence of sub- or supernormal firm profit over time as an indicator of firm monopoly power or union power to extract rents. However, atypical long-term worker attachments can also help to explain the persistence of measured excess profit across firms. "Traditional accounting measures of firm assets do not include firm holdings of human capital because the firm cannot force workers to stay with the firm. However, the fact that specific human capital investment or productive firm-worker matches lead to long-term voluntary attachments between the firm and the worker, even in the face of business cycle fluctuations, implies that firms may have a quasi-hold on the specific human capital embodied

¹⁰ In point of fact, specific human capital theory has many more gaps; "[although] Jacoby (1990) [...] concedes that empirical evidence supports a shift from the late 1800s to at least the mid-1970s toward greater job stability, he argues (p. 323) that "there is little evidence that the shift resulted from a growing reliance on firm-specific techniques or skills. In fact, the evidence suggests that the opposite was true: that technology and job skills became less, rather than more firm-specific over time"(Blair)."

in its workers. For such firms, traditional accounting measures of profit rates, such as firm revenue per unit of physical capital, will overstate the firm's rate of return because the denominator will only include measures of physical capital and not human capital" (Bartel 2000).

The economist's unease with his key concept is noticeable; to account for its peculiarity he is forced to invoke yet another terminological invention. His cautionary "quasi-holding" used in relation to the appropriation by the firm of his "human capital" reflects the simple fact that the latter, or rather what hides beneath it, i.e. labour power is owned by its employee bearer rather than his or her employer. At the same time, his choice of terms alludes, without him realising it, to the corporate capturing of economic benefits from employee individual and collective labour power, as highlighted by another human capital scholar who argues that "Firm-specific human capital creates a relationship-specific surplus which [...] provides a motivation for continuity of association" (Wilkins 1998).

Some human capital scholars go so far as to put forth claims that, albeit by default only, make use of the language suggestive of, surprise, surprise, Marx's theory of surplus value: "Flamholtz introduced the idea that employees contribute more to the organisation than their salary and benefits" (Bukowitz et al. 2004).

To be sure, this similarity is spurious, human capital theorists may be interested in many things, but certainly not in revealing the relationship of their central concept to capitalist exploitation. More generally, as the foregoing clearly shows, the theory of human capital obfuscates the reality, making it impossible for its users to perceive, let alone account for its relationship to the rent theory of socio-economic ownership.

Another pair of scholars have also chosen the terms whose wording is unequivocal: "the rent from specific human capital accrues entirely to the firm while it appropriates no return from the worker's general human capital. If this rent is sufficiently large relative to the return on general HC, surplus from continued employment will be above what he can realise on the external market. As a consequence, the worker captures part of the rent from specific skills" (Kessler, Liilfesmann 2002).

The claim cited above allows us to grasp a key cause of confusion pertaining to human capital theory. The term "rent" explicitly suggest a reference to ownership, but the narrow theoretical horizons of human capital analysts permit them to attribute this ownership solely to capital, it is beyond their imagination that a worker may be an owner of something other than capital, although a myriad of other human capital writers' pronouncements suggest otherwise; e.g. "Ruhm [1991], Topel [1991], and Neal [1995] all find that a significant fraction of workers' compensation derives from human capital specific to their firm or industry" (Figura, Wascher 2010).

One associates the concept of compensation with labour power rather than capital, but for human capital students the idea of labour power as an object of ownership is inconceivable, so they end up treating employees as holders of human capital.

The term "compensation" definitively referring to labour power is forcefully subsumed into the concept of human capital also in the following diagnosis of problems imposed on the financial industry whose author "examines the role of human capital flows in the performance of the financial sector. This is an increasingly important question as government regulations are overhauled in the aftermath of the 2008 financial crisis. I investigate the effect of labour market competition from hedge funds on the mutual fund industry. I find evidence of an increasing flight of top-performing young managers from mutual funds, a drop in mutual fund returns, and deterioration in recruiting standards.

These findings are not explained by differences in fund characteristics, risk loadings, fund styles, or the intervening dot-com bubble. The results suggest that industry-specific government regulations, especially ones focused on employee compensation, can lead to brain drains that have crippling effects on the health of the regulated sector” (Kostovetsky 2009).

Most of the earlier work on return to schooling focuses on developed countries, but recently extensive publications have reported the earnings effect of schooling in the developing world. Scholars have found that there is a great deal of heterogeneity in rate-of-return estimates across various countries. For example, using an ordinary least squares (OLS) approach, Machin and Manning estimated a return to a year of schooling of 6.9 percent over a period of 1978 and 1986 in Great Britain, which was also supported by the results of Moghadam (2008).¹⁷ However, such estimates are argued to be markedly smaller than those assessed by an instrumental variable approach. According to Harmon and Walker, (1995) return to a year of schooling was as high as 16.9 percent in Great Britain. In the United States, it is believed that the rate of return to investment in education fluctuates over time and varies across regions. Psacharopoulos (1994) showed that the rate of return to a secondary education fluctuated around an average value of about ten to twelve percent over the entire period of 1939 to 1976.²⁰ The rate of return to college education was about eight to nine percent from 1967 to 1981 and rose slightly to over ten percent in 1982.²¹ According to Krueger and Lindahl (2001), "each additional year of schooling appeared to raise earnings by about ten percent in the United States." Some scholars have attempted to compare the effects of human capital across various countries. Using International Social Survey Program data for 1985 to 1995, Trostel, Walker, and Woolley (2002) estimated return to schooling for the employed individuals aged 21 to 59 in the year of interview across 28 countries. The OLS estimates of return to a year of schooling ranged from 1.9 percent for women in the Netherlands to 19.2 percent for women in the Philippines. The estimates were 7.4 percent for males and 9.6 percent for female in the United States. The researchers mentioned above further concluded that the variation in the rate of return to schooling seemed not to be correlated with per capita GDP worldwide.

II. 7. 1. MANAGERIAL OWNERSHIP

The above-mentioned managers are, however, a specific class of employees, indeed a specific socio-economic class, which accounts for the bulk of problems faced by those who strive to couch their socio-economic position in terms of the said rents. For instance, human capital economists ponder “whether the active action increases or reduces the manager’s rent in his ongoing relationship with the owner” (Mailath et al. 2003). They allude to economic ownership, but the crux of the matter is they are not in a position to grasp and satisfactorily render Managers’ ownership, and thereby class situation. Line supervisors and perhaps at least a portion of middle management is another matter; the bulk of their compensation can be interpreted as coming from their work. But the top executives and corporate directors live in a different world, as the UK prime minister David Cameron briefly summarised the nmews that in the age of crisis, general austerity, flat economic growth, and high unemployment British top executives earned in 2010 almost 50 per cent more than a year earlier. The thing is their income only in part (which in the case of corporate directors approximates zero) comes from work, the remainder has the same source as incomes reaped by corporate shareholders, that is, the surplus value. This much is in fact at least implicitly acknowledged by those engaged in the debate over the relationship between who are in fact different categories of economic owners of corporate

capital. In the literature under consideration direct managerial ownership is often treated as a solution of the agency problem, stemming from the division of roles, and thus interests of the two main sides to the corporate equation. . However, the possibility of managerial ownership substituting for alternate corporate governance mechanisms did not find any empirical support (Holderness, Kroszner & Sheehan 1999). It should be also noted that from 1988 to 2003, the average change in managerial ownership is significantly negative every year for American firms (Fahlenbrach & Stulz 2007). Even more significantly, the absolute sensitivity of CEO wealth to performance remains small. For a \$1,000 change in firm value, the wealth of the average CEO of large, public corporations currently changes only by about \$10.62

All else being equal, then, a CEO who wrote himself a cheque for an extra \$1,000 would net about \$990 after taking into account the impact of the change in firm value on his shares and options (Bebchuk, Fried & Walker 2001).

Nevertheless, to be fair, one should review other empirical studies bearing on the issue of the relationship between managerial ownership and corporate performance. A major study has examined the impact of managerial ownership on risk-taking and firm performance. The study utilized data from thirty randomly selected companies from four industries in four different sectors: Industries are oil and gas and field services from the energy sector; insurance, property, and casualty from the financial sector; drugs from the health sector; and computer and data processing from the technology sector. This yielded a total of 120 observations.

Accounting measures and correlation analysis were used to determine the relationship between managerial ownership, risk-taking, and firm performance in each industry and for the whole sample. However, the research found no significant relationship between these variables in different industries and for the whole sample.

According to the study, “managerial ownership seems to be merely a reflection of the way in which managers receive their benefits. Managerial ownership does not seem to have any incentive to work harder for improving the company’s performance in the accounting sense” (Jahmani & Ansari 2006).

It is along the same lines that the insider-reward augmentations argument, according to which: “Other things being equal, managers may prefer equity compensation when they expect their firm to perform well and, consequently, the value of the firm to increase. As a result, higher levels of insider ownership are expected at firms with high corporate values” (Cho 1998, 115). It is also other researchers that argue that owner-managers are insiders who may capitalize on their insights by increasing their ownership when they expect the financial performance to improve and decrease their ownership when they expect the financial performance to deteriorate (Loderer & Martin 1997, 237).

Similarly, Himmelberg, Hubbard and Palia (1999), using Panel data from Compustat, observed small and large U.S. firms—398 in 1982, 425 in 1983 and 427 in 1984, and various performance indices, such as Tobin’s Q by market value of stock + estimated market value of preferred stock + book value of total liabilities to book value of total assets, and return on assets. They found no relation between managerial ownership and performance even for sub-samples of large and small firms. It must be admitted that there are a number of studies that reach different conclusions. Mehran (1995) investigated 153 large and small industrial U.S. firms for the period 1979–80. Taking into account Tobin’s Q by market value of all firm securities to replacement costs of all tangible assets and return on assets, he found that both performance measures increased significantly with CEO ownership. Other findings were the significant effect of ownership by all officers and directors or ownership by outside directors.

Blockholder ownership is not significant in any sense. Morck, Shleifer & Vishny (1988), in the *Journal of Financial Economics*, investigated 371 of the largest U.S. firms (from the Fortune 500) in 1980. They took into account the combined shareholding by all members of the board in the ranges: (0–5%), (5–25%) and (25–100%). With a combined shareholding by the top two officers, and a dummy for the presence of the founder on board, their finding being that profitability is significantly increasing for board ownership in the (0–5%) range and significantly decreasing in the (5–25%) range and if the founder is present on the board of old firms. Similar results for top two officers.

It is possible, however, that these results are accounted for by certain neglected factors, as some other studies seem to suggest. One such study examines whether the relationship between equity ownership and firm value varies with the growth opportunities of firms. For high growth firms, it finds that equity ownership is only significant in three out of nine regressions while for low growth firms, it is significant in eight of the nine regressions. This provides some evidence that equity ownership may be more important for low growth firms because managers in these firms can only increase the size of the firm, and consequently the magnitude of their utility, by taking negative present value projects. However, the fact that the coefficient on the equity ownership variable for high growth firms is significantly larger than the coefficient for low growth firms in two of the regressions is inconsistent with the argument (McConnell & Servaes 1995).

Another study has focussed on how UK companies compare to their U.S. counterparts because of institutional differences across the two markets. The authors find a strong U-shaped relationship between the level of managerial ownership and the probability that the roles of chairman and CEO are split, that a non-executive director is appointed as chairman, and the proportion of non-executive directors on the board. However, they report a generally weak relationship between firm value and managerial ownership, board structure and the combination of managerial ownership and board structure. These results cast doubt on the effectiveness of these internal corporate governance mechanisms (Faccio & Lasfer 1999, Cass Business School Research Paper).

Another investigation of the issue of whether managerial ownership is related to firm value found that data is consistent with firms facing agency problems of empire building and overvalued equity. Firm value is impacted by managerial ownership through specific managerial actions of higher labour expenses, accruals management and avoiding debt that are subject to agency problems (Khanna 2005). The agency approach, e.g. Jensen & Meckling (1976), Morck, Shleifer & Vishny (1988) and Stulz (1988), posits that greater managerial ownership benefits shareholders because it increases managers' incentives to increase firm value, but when managerial ownership becomes too large, it enables managers to entrench themselves, so that firm value falls as managerial ownership increases.

Meanwhile, property rights scholars such as Demsetz (1983) and Demsetz & Lehn (1985) represent what has been called the contracting theory approach to managerial ownership. The contracting approach posits that firms have an optimal level of managerial ownership that solves a principal-agent problem. Shareholders set the terms of a compensation contract for management which includes management's ownership in the firm. If actual managerial ownership is the solution to a contracting problem between management and shareholders and there are no adjustment costs, firm value would always be maximized given the constraints faced by shareholders (Fahlenbrach & Stulz 2007). The authors of that label argue that the relevant empirical evidence can be better explained by an alternative managerial ownership theory, which

they call the managerial discretion theory of inside ownership. This theory emphasizes that managers own shares to maximize their welfare.

A more general approach to managerial compensation has been also proposed—under the “rent extraction” view, the executives, as part of the agency problem, influence pay levels to provide themselves with rent, which aptly underscores the crucial ownership attribute of incomes in question. Under rent extraction corporate managers are firmly in control. The outside directors are connected to the executives by bonds of interest, collegiality, or affinity (Bebchuk et al. 2001). And indeed, it is in this vein that one should interpret studies such as that by Cho (1998), who showed that managerial ownership had no impact on corporate value and investment but that corporate value had a significant impact on managerial ownership, or by McConnell & Servaes (1990) in the *Journal of Financial Economics* who investigated 173 firms in 1976 and 1,093 firms in 1986. They measured U.S. firms listed on NYSE or AMEX using such measures as (1) Tobin’s Q by market value of stock, preferred stock and debt to replacement value of assets, and (2) return on assets by earnings before depreciation, interest and taxes divided by replacement value of assets.

It turns out that both measures of profitability are significantly increasing with ownership by managers and directors, and this relation is significantly roof-shaped with a performance peak for 69% ownership in 1976 and 41% in 1986. For the fact of the matter is that with such high stockholding, managers in question become blockholders themselves, which implies a necessity of changing their classification.

And indeed, in the next study, using the new 1988 sample reproduces the results from McConnell & Servaes (1990). The only difference is that Tobin’s Q now is significantly increasing with blockholder ownership. For all sample periods the relation between Tobin’s Q and all ownership variables is insignificant for high-growth firms and significantly positive and roof-shaped for low-growth firms (McConnell and Servaes 1995).

The same necessity of reclassification is shown by Denis & Denis (1994) (after Mathiesen) in the *Journal of Corporate Finance* who studied 72 U.S. firms with above 50% insider ownership by managers and directors finding no difference in performance between majority controlled firms and other firms. They also found that the likelihood of majority control increased significantly with family or founder involvement. Indeed, 80% of majority controlled firms had substantial family or founder involvement, majority controlled firms had significantly less outside directors, less outside blockholdings, less institutional shareholdings, and paid less dividends and dual class shares.

Another study which shows that our comment is relevant is that by Wruck (1989) (after Mathiesen) in the *Journal of Financial Economics* who find that profitability is significantly increasing for changes in board voting stock in the (0–5%) range and significantly decreasing in the (5–25%) range. Considering the model using changes in combined voting stock by managers, directors and 35% block holders, profitability is significantly decreasing in the (5–25%) range and significantly increasing in the (25–100%) range.

Furthermore, even leaving for the moment these criticisms aside, there remains one fact inconsistent with the property rights position, because it suggests the ineffectiveness of corporate control mechanisms. But if one particular level of managerial ownership maximizes value, why would other combinations of managerial ownership and Q or any other corporate performance measure for that matter appear in the data?

There is, to be sure, one other possibility suggested by Coles, Lemmon & Meschke (2003). The authors, however, refute that argument: The point at which the maximum of the

hump-shaped relationship between Q and ownership appears in our sample is 20.09%. Based on our estimates of the Q-performance relation, increasing CEO ownership by one standard deviation, from 14.41% to 20.06% implies an increase in firm value equal to \$659 million on average. It seems implausible that the transaction costs of realigning CEO pay-performance sensitivity exceed that figure, much less the even greater amounts associated with larger departures of ownership from that which supports maximal Q.

Based on this line of reasoning and plausible transaction costs, there is far more variation in observed ownership structure than one would expect. (Coles, Lemmon & Meschke 2003)

II. 7. 2. SPECIFIC AND GENERAL HUMAN CAPITAL

The pair of terms used by the authors mentioned above refers to the distinction introduced by Becker (1964), according to whom the firm has incentives to invest in training only if training is specific to the firm (it increases the worker's productivity only in the firm that is investing). If training is general (it increases the productivity of the worker in any firm), the firm free rides and therefore the worker has to invest in training. However, in reality the distinction is not so neat, "more recent studies show that the distinction between general and specific training is not exhaustive. Some types of training are neither general nor specific nor the sum of general and specific components. Such training, defined as transferable, is "training for skills which are of potential value to at least one other firm in addition to the training firm, without any assumption about the nature of labour market competition" (Stevens 1996: 26). When training is transferable, the firm and the worker both have some incentives to invest in it. Moreover, other studies, such as Katz and Ziderman (1990) and Acemoglu and Pischke (1998) show that, owing to labour market imperfections and asymmetries between firms, firms have incentives to invest in training even if it is general, sharing its costs with the worker" (Zoretti 2002).

The issues considered above go to the heart of human capital theory.

An American scholar lays out the typical human capital approach to the matter in the following way: Individual earnings are strongly related to educational attainment. People who have completed high school earn more than those who have not; people with a bachelor's degree earn more than those with only a high school diploma; and those with a graduate education earn more than those with only an undergraduate education.

Average annual earnings of individuals with a bachelor's degree are more than 75 percent higher than the earnings of high school graduates. These additional earnings sum to over \$1 million over a lifetime. The differential in earnings based on educational attainment has increased over time. For example, for full-time male workers between the ages of 35 and 44, the earnings premium associated with having a bachelor's degree versus a high school diploma has risen from 38 percent in the 1980-84 period to 94 percent in 2000-03.

The benefits to an individual from a university education vary with the quality of the institution attended. Those who graduate from an elite university earn substantially more than those who graduate from a lower-quality institution. To properly assess the economic value of a college education, the benefits realised in terms of higher future earnings must be discounted to adjust for the time value of money. The discounted earnings must then be weighed against the full costs of acquiring a college education including not only the tuition paid by the student, but the earnings foregone while the student is in college and the appropriations of state and local governments. When these calculations are made, the benefits of a college education are seen to be more than three times as large as the costs.

If the value of a college education is expressed on the same basis as the return on a financial investment, the net return is on the order of 12 percent per year, over and above inflation. This compares favourably with annual returns on stocks that historically have averaged 7 percent. (Hill et al. 2005)

However, there are several serious problems with that account. Firstly, notice that the above argument is based on “the central premise of human capital theory, that education is an economic activity which can be analysed using the standard tools of economic theory” (Quiggin 1999) which is expressed by another researcher of that persuasion as follows: “Colleges and universities perform two fundamental functions in the knowledge economy: producing human capital and creating new knowledge” (Hogan 2011). In the same vein, two human capital scholars present “education as production, with enhancements to students’ human capital being output. The specific product of higher education is a body of specialized, current knowledge, and the development of abilities to comprehend complex ideas, to discern among competing ideas, to complete involved tasks, and to organise and communicate knowledge effectively to others. To focus upon evaluation issues in education, we consider only two types of labour in the production process, educator and administrator. Educators are a specialized type of labour whose task it is to instill and certify the enhancements to human capital mentioned above. Administrators coordinate the activities of educators and assure the survival of the production framework or school” (Forbes, Paul 1991).

The aforementioned premise is untenable, for it blurs the qualitative distinction between two specific societal structures: education belongs to the ideational structure whose function is the creation and dissemination of knowledge, ideas, etc. The economy, however, comprises production and exchange of goods and services. Education may indeed be an economic activity, but only if and when it takes place in privately-owned institutions, as distinct from public and non-profit organisations. Those who adopt the above-mentioned premise commit a frequent fallacy of identifying impact with belonging: the fact that X, an element of A influences Y, a component of B does not mean that X becomes an element of B, and the distinction between A and B makes no sense.

Going further, according to the theory under consideration, prospective workers making the investment decisions compare the attractiveness of alternative future income and consumption streams, some of which offer enhanced future income, in exchange for higher present training costs and deferred consumption. [... However-note: J. T.], critics of human-capital theory point to the difficulty of measuring key concepts, including future income and the central idea of human capital itself. Not all investments in education guarantee an advance in productivity as judged by employers or the market. In particular, there is a problem of measuring both worker productivity and the future income attached to career openings, except in near-tautological fashion by reference to actual earnings differences which the theory purports to explain. Empirical studies have suggested that, though some of the observed variation in earnings is likely to be due to skills learned, the proportion of unexplained variance is still high, and must be an attribute of the imperfect structure and functioning of the labour-market, rather than of the productivities of the individuals constituting the labour supply. (Marshall 1998)

The author cited above hit the nail in the head when he took on the way of understanding productivity pertinent to human capital analysis. But it is not the end of the story. The following illustrative application of the said analysis highlights the gist of the problem: Robotic assisted laparoscopic pyeloplasty is an emerging, minimally invasive alternative to open pyeloplasty in children for ureteropelvic junction obstruction.

The procedure is associated with smaller incisions and shorter hospital stays. To our knowledge previous outcome analyses have not included human capital calculations, especially regarding loss of parental workdays. We compared perioperative factors in patients who underwent robotic assisted laparoscopic and open pyeloplasty at a single institution, especially in regard to human capital changes, in an institutional cost analysis.

A total of 44 patients 2 years old or older from a single institution underwent robotic assisted (37) or open (7) pyeloplasty from 2008 to 2010. We retrospectively reviewed the charts to collect demographic and perioperative data. The human capital approach was used to calculate parental productivity losses.

Patients who underwent robotic assisted laparoscopic pyeloplasty had a significantly shorter average hospital length of stay (1.6 vs 2.8 days, $p < 0.05$).

This correlated with an average savings of lost parental wages of \$90.01 and hospitalization expenses of \$612.80 per patient when excluding amortized robotcosts. However, cost savings were not achieved by varying length of stay when amortized costs were included. Robotic assisted laparoscopic pyeloplasty in children is associated with human capital gains, eg decreased lost parental wages, and lower hospitalization expenses. (Behan et al. 2011)

Now productivity increases are identified with pay rises of an individual regardless of whether she works as a nurse in a public hospital, teacher in an elementary school or at the car assembly line. In a word, it is implied that one should refer to human capital gains whenever its carrier earns a higher salary or wage. Now whilst such a development is certainly “productive” for the individual involved in the sense that it generates increased earnings, this neglects a crucial question whether the work in question is part of the economy at all, and whether it translates into benefits captured by her employer, which is to say whether it constitutes surplus value, a title for the appropriation of a portion of the latter only (in the case of commercial or service employees), or it has nothing to do with profit in the economic sense.

Let us now take a look at the notion of foregone income crucial for substantiating the conception of schooling as an investment in human capital.

Even human capital scholars themselves sometimes willy nilly admit that the notion in question can pose a real conundrum: “Becker et al. (2003) argue in a Wall Street Journal editorial that reducing tax rates on labour income will encourage investment in human capital by increasing its rate of return. Yet as Judd (2001) points out, reducing tax rates on labour income also increases the cost of human capital investment, so that the net effect is theoretically ambiguous” (Allgood, Snow 2006).

The issue has been addressed by a critic of the well-known functional theory of social stratification, who begins his critique with the charge of circularity:

Davis and Moore introduce here a concept, “sacrifice” which comes closer than any of the rest of their vocabulary of analysis to being a direct reflection of the rationalizations, offered by the more fortunate members of a society, of the rightness of their occupancy of privileged positions. It is the least critically thought-out concept in the repertoire, and can also be shown to be least supported by the actual facts.

In our present society, for example, what are the sacrifices which talented persons undergo in the training period? The possibly serious losses involve the surrender of earning power and the cost of the training. The latter is generally borne by the parents of the talented youth undergoing training, and not by the trainees themselves. But this cost tends to be paid out of income which the parents were able to earn generally by virtue of their privileged positions in the hierarchy of stratification. That is to say, the parents’ ability to pay for the training of their

children is part of the differential reward they, the parents, received for their privileged positions in the society. And to charge this sum up against sacrifices made by the youth is falsely to perpetrate a bill or a debt already paid by the society to the parents.

So far as the sacrifice of earning power by the trainees themselves is concerned, the loss may be measured relative to what they might have earned had they gone into the labour market instead of into advanced training for the “important” skills. [... The-note: J. T.] way to measure how much is lost during the training period is to compare the per capita income available to the trainee with the per capita income of the age peer on the untrained labour market during the so called sacrificial period. If one takes into account the earlier marriage of untrained persons, and the earlier acquisition of family dependents, it is highly dubious that the per capita income of the wage worker is significantly larger than that of the trainee. Even assuming, for the moment, that there is a difference, the amount is by no means sufficient to justify a lifetime of continuing differentials.

What tends to be completely overlooked, in addition, are the psychic and spiritual rewards which are available to the elite trainees by comparison with their age peers in the labour force. There is, first, the much higher prestige enjoyed by the college student and the professional-school student as compared with persons in shops and offices. There is, second, the extremely highly valued privilege of having greater opportunity for self-development. There is, third, all the psychic gain involved in being allowed to delay the assumption of adult responsibilities such as earning a living and supporting a family. There is, fourth, the access to leisure and freedom of a kind not likely to be experienced by the persons already at work.

If these are never taken into account as rewards of the training period it is not because they are not concretely present, but because the emphasis in American concepts of reward is almost exclusively placed on the material returns of positions. The emphases on enjoyment, entertainment, ego enhancement, prestige and esteem are introduced only when the differentials in these which accrue to the skilled positions need to be justified. (Tumin 1945).

Tumin is correct in a more general sense; as the following claim clearly shows, human capital theory rests on a particular model of man, homo economicus: “Higher life expectancy raises the optimal quantity of schooling because investments in education will earn a return over a longer period of time” (Sebnem et al.). Economic man, driven solely by the one-sided purpose of income maximisation, cannot accommodate other, commonly encountered in real life motives, like, for example, intrinsic satisfaction, knowledge acquisition for its own sake. The same motivations may characterise job holders, so that to portray them all as narrow-minded income-maximisers is grossly simplistic.

The issue of foregone earnings, however, has a broader significance; it constitutes the bottleneck of human theory. Even proponents of the theory are forced to acknowledge that It is impossible to calculate with certainty the rate of return to a university education for any single individual: even at the end of the person’s working life and with full data on his or her education and earnings, the exercise would involve guesswork. The reason is that one would also need to know how much the individual would have earned without a university education, which could be estimated by looking at the earnings of otherwise similar people who did not go to university, but the results would obviously be subject to error. Moreover, even “if it were possible to measure an individual’s rate of return to education, the result would have only historical value. Instead, we want to know what social and individual rewards to education are implied by the present structure of education finance and how much today’s graduates can expect to earn in the future. But how can we predict how much people will earn over their lifetimes?

In the absence of a crystal ball, one can look at how much people of different ages with a given education earn now, and assume that this amount will remain fixed in the future -an imperfect procedure, but it is hard to think of a better one” (Collins, Davies 2005).

The above-mentioned methodological shortcoming is supplemented with the fallacy of *petitio principii*, e.e. assuming in advance what is yet to be explained, like in the following argument, where the notion of the individual’s income is used to explain the same individual’s income: We view investment in formal education as a production process with outputs given by increments to lifetime incomes and inputs of educational institutions—most importantly, teachers’ labour compensation — as well as the services of school facilities and the costs of school materials and other expenses. However, the inputs also include the value of the time of students, and this is precisely equal to the increments in their lifetime incomes since they “own” all the benefits of a better education. In a system of national accounts this must be counted as their current income from schooling. (Jorgenson 2010)

Human capital theorists are in point of fact somehow prone to this kind of logical fallacy. In the following example, for a change, teachers’ income is taken as a measure of a given school’s quality manifested in turn in its graduates’ income.

According to one commentator, the most extensive and sophisticated study of this kind is that of Card and Krueger (1998). Card and Krueger (1998) use a 5 per cent sample of the US Census made available for public use and examine white men educated in US public schools between 1920 and 1949, divided into three ten-year cohorts. This is combined with extensive state-level data on the quality of education, measured by length of the school year, teacher-student ratios and the wages of teachers relative to those of workers in general. Card and Krueger (1998) find that each of their quality measures is strongly, and statistically significantly, correlated with returns to education. (Quiggin 1999)

According to the theory under investigation the rational worker invests in training, which will maximize the economic return (earnings) on investments while free competition among firms for labour skills guarantees a price for that labour power.

The theory’s focusing on individuals means that explanatory variables are personal properties while taking structure largely for granted. As a result socio-economic success or failure hinges upon the characteristics brought into the marketplace by the individual EMPLOYEES. This model of earnings determination, however, is untenable.

Beck, et al (1978), focus on the issue of fixed returns, the assumption by human capital theorists that economic returns to worker characteristics are uniform.

In order to do this, they rely on sectoral economic differentiation models based on theories of economic dualism. These models divide the industrial structure into distinctive sectors within which employers and workers face fundamentally different conditions and operate according to fundamentally different rules. Beck, et al. distinguish two sectors:

1.) The core industrial sector: This is dominated by large corporate enterprises which came to constitute an oligopolistic system of production. It includes those industries that comprise the muscle of American economic and political power. The firms are noted for high productivity, high wages, high profits, intensive utilization of capital, high incidence of monopoly, and high degree of unionization. E.g., automobile, steel, and rubber industries.

¹¹ They are similar to that by Galbraith.

2.) The peripheral sector: This is characterised by small firms, operating in a more or less open, competitive capitalistic environment. They are concentrated in agriculture, nondurable manufacturing, retail trade, and subprofessional services. The peripheral industries are noted for their small size, labour intensity, low profits, low productivity, intensive productivity, intensive product market competition, lack of unionisation, and low wages. Unlike the core sector industries, the periphery lacks the assets, size, and political power to take advantage of economies of scale or to spend large sums on research and development.

The study the researchers have made has led to the conclusion that there are important differences in the labour force composition, work experiences, and earnings of the sectors. Core workers have larger, more homogeneous annual earnings than do periphery workers. Also, core members are more likely to be in higher prestige occupations, to be employed full time, to work more hours per week, and to belong to a union.

Overall, there are persistent sectoral differences in economic outcomes which cannot be explained by the racial, sexual, human capital, or occupational characteristics of their respective labour forces. (Beck et al 1978).

This kind of dual economy considerations can be considered as an example of labour-market segmentation. In segmented labour markets, the “return on human capital” differs between comparably skilled labour power-market groups or segments. An example of this is discrimination against minority or female employees. In the above case human capital theory is contradicted by another theory. There is, however, much more to the matter than that. There exists yet another alternative approach that at least in part invalidates human capital theory.

In a wide range of empirical studies, it has been observed that schooling and earnings are strongly and consistently positively related, with causation running from schooling to earnings. These issues are indisputable. What is still debated after more than a generation of theoretical and empirical studies are the reasons why schooling enhances earnings? Regarding this issue, two fundamental schools of thought exist: the human capital theory, and the screening hypothesis.

The human capital theory concludes that the skills learned in school directly enhance job-related productivity; this in turn results in higher earnings.

Its explanatory alternative posits that schooling is simply used as a screening device which allows employers to assess quickly and cheaply the productivity levels of potential employees. According to this hypothesis, those with more schooling are typically more productive to begin with, indicating that the skills acquired in school may not contribute much (if at all) to subsequent job-related productivity. Consequently, the observed positive relationship between schooling and earnings is explained by the role of schooling as a screening device.

A thorough examination of which school of thought better explains the schooling-earnings relationship is especially important due to, among other reasons, the far-reaching implications for traditional educational policy if the screening hypothesis in an extreme form holds true. In this situation, Ehrenberg and Smith (1991) conclude that schools would be very ineffective in improving one’s socioeconomic status.

One such study addressing the causality debate between schooling and earnings (Card 2001) reaffirms Griliches’ (1970) conclusion that the effect of ability and related factors does not exceed 10 percent of the estimated schooling coefficient. The human capital theory-screening hypothesis debate has, however, been addressed by many studies which make use of a variety of often innovative techniques. One such method for empirically testing for the validity of

the screening hypothesis is developed by Wiles (1974), and applied in Miller and Volker [1984] and Arabsheibani (1989).

This test determines whether or not individuals realise a *ceteris paribus* earnings premium when the skills they acquire in school are directly relevant to their occupations, as opposed to the situation where they are not.

The presence of such an earnings premium supports human capital theory while its absence supports the screening hypothesis. Empirical applications of the Wiles test have not yielded consistent conclusions. Miller and Volker's results largely support the screening hypothesis while Arabsheibani's results largely support human capital theory.

Another method which has been used to test empirically the validity of the screening hypothesis is to determine if there are sheepskin effects in the returns to schooling. In other words, does the rate of return on years of schooling increase disproportionately during years when diplomas are conferred? In this situation, the screening hypothesis would be supported if such a disproportionate increase exists, and reflects the use of the diploma as a screening device as opposed to, for example, the contribution to productivity and earnings resulting when one acquires the particular school year during which the diploma happens to be conferred.

Layard and Psacharopoulos [1974] find no empirical evidence of sheepskin effects. They indicate that this finding supports the human capital theory over the screening hypothesis since they assert that one of the "three unverified predictions of the screening hypothesis" is the presence of sheepskin effects in the returns to schooling.

Primarily intended as a response to Layard and Psacharopoulos (1974), and by making use of "the type of data [Layard and Psacharopoulos] wished they had", Hungerford and Solon (1987) find that sheepskin effects do exist and conclude that "the previous dismissals of the screening hypothesis were premature".

Hungerford and Solon (1987) demonstrate the presence of sheepskin effects in the returns to schooling using Current Population Survey (CPS) data." In this study, sheepskin effects are found to exist, but are not stable across individuals according to whether or not they found their accumulated schooling relevant for their occupations. Rate of return estimates on years of schooling between these two groups of individuals are not stable either. The stability pattern of sheepskin effects in the returns to schooling observed in this study provides novel insight into the human capital theory-screening hypothesis debate.

For individuals whose schooling is related to their occupations, the rate of return estimate on years of schooling is large and positive as well as being statistically significant, and sheepskin effects are not present.

These results are consistent with the human capital theory. For individuals whose schooling is not related to their occupations, additional years of schooling attained do not cause an increase in the natural logarithm of usual hourly earnings, *ceteris paribus*.

This is consistent with the human capital theory. However, sheepskin effects are found to be present, indicating that diplomas are being used as screening devices for this group of individuals. Given the virtual irrelevance of schooling for one's occupation in this situation, and given that empirically a *ceteris paribus* increase in ED does not increase one's earnings, any potential human capital interpretation of the presence of sheepskin effects would not apply. (1987) In this case, in other words, one's ability to conclude that the presence of sheepskin effects validates the screening hypothesis is far greater than in other studies interpreting the presence of sheepskin effects in the returns to schooling since in these other studies, human capital interpretations of the presence of sheepskin effects could not be ruled out as easily.

At the same time, as opposed to other analyses of sheepskin effects such as Belman and Heywood (1991), Shabbir (1991), and Heywood [1994] which interpret the presence of sheepskin effects as validating predominantly the screening hypothesis. The findings in the aforementioned study are consistent with the arguments of both human capital theorists and supporters of the screening hypothesis. Layard and Psacharopoulos (1974) correctly indicate that the strongest advocates of the human capital theory would agree that in certain instances schooling is used as a screening device, just as proponents of the screening hypothesis would acknowledge that, at least to a certain extent, schooling enhances job-related productivity, which in turn enhances earnings. (1999).

Similarly, a study conducted in Pakistan “provides full support to the human capital theory while partial support to the credentialist view” (Nasir 2002).

To summarise this discussion, human capital theory is in one case challenged head-on, and in the two further ones in part.

In addition, though, it must be noted that the theory being discussed suffers also from inner contradictions, which raises a question mark over its scientific status. “The standard model of human capital investment, formalized by Ben-Porath (1967), results in monotonically decreasing investments in human capital. [...] The Ben-Porath model provides for a static rental rate of human capital and, thus, an investment pattern that is unaffected by changes in the rental rate.

However, the model developed in this paper incorporates a dynamic and uncertain rental rate of human capital and results in patterns of increasing investment in human capital. If expectations of the future rental rate of human capital increase, then the marginal revenue of human capital may not monotonically decrease over time. So investment in human capital may not steadily decrease either. As a result, it may be optimal for an individual to increase investment in human capital if expectations of the rental rate of human capital increase enough” (Monks 1998). What is noteworthy about the above argument, is its tautological character: expected returns are higher, therefore returns are higher. This is related to subjectivism characteristic of marginalism¹² adopted by the author – expectations regarding future returns are higher, therefore the returns are higher. This is nothing but subjective idealism in its pure form.

¹² Pitfalls inherent in this methodological perspective are apparent even for some human capital writers who, *inter alia*, criticise Becker (1964) according to whom “returns to schooling would decline for the individual with more advanced schooling, until the marginal return would fall below the opportunity cost of borrowing, at which point the individual would stop investing in (attending) school. Yet, in reality, some empirical studies find the reverse, in which private returns to schooling increase at secondary or higher education compared to the primary level. This is most common when virtually all members of a cohort complete the primary level and a bottleneck develops in the public educational system at a higher level” (Schultz 2003, Côte d'Ivoire, Ghana and Thailand, Schultz 1993). Similarly, the classic pattern of falling returns to education by level of economic development and level of education is called into question by the updated data set according to which the private returns to higher education are increasing. (Psacharopoulos, Patrinos 2002). Some human capital scholars attempt to validate marginalist premises on an in the last analysis biological basis: “human capital is inherently embodied in humans and the existence of physiological constraints on brain capacity subjects its accumulation at the individual level to diminishing returns” (Galor, Moev 1997). Meanwhile, modern neuroscience has established beyond any doubt that human brain retains its capacity to grow and regrow new

In turn, methodological individualism pertinent to human capital theory contributes to the above-mentioned masking of the aforementioned class relations in yet another respect as well. It is the latter that help account for the puzzle encountered by the human capital scholars:

Despite the very high return on investment for the time and money spent on attaining a college degree, only one-quarter of the U.S. adult population has at least a bachelor's degree. Academic ability and information barriers limit the number of individuals who attain a university degree. Financial barriers to the completion of a bachelor's degree exist but government programmes that promote access have been effective.

The academic ability of the individual - which is shaped throughout his/her life by a variety of family and environmental factors — and the values and goals of the individual — which are strongly influenced by the education of his/her parents — are important determinants of educational attainment. (Hill et al. 2005)

Also, both explanations mentioned in the following quotation clearly refer to class divisions, albeit in the stratification guise: To the extent that subsidies do not cover the full costs of college tuition, persons are forced to raise funds to pay tuition through private loans, through work while in college, or through foregone consumption. This may affect the choice of college quality, the content of the educational experience, the decision of when to enter college, the length of time it takes to complete schooling, and even graduation from college. Children from families with higher incomes have access to resources that are not available to children from

neural connections far longer than had been previously thought. Also other economists working within the human capital perspective openly challenge the conception in question "in the seventies. In a neoclassical approach where each individual obtains and consumes his marginal product, the emigration of the more skilled workers in response to economic incentives increases world income without reducing the welfare of those left behind; migrants earnings are improved while the welfare of those who have been left behind is not reduced (see Grubel and Scott (1966) and Johnson (1967)). [...] It can be shown that 'brain drain' reduces the growth rate of the effective human capital that remains in the economy and, hence, generates a permanent reduction of per capita income growth in the home country. Brain drain also can induce an increase in the growth rate of the country to which migration has taken place although the effect can vary over time, depending on the evolution of the ratio between the average human capital in the two countries.[...] Migration of human capital can lead in the long run to differences in both the growth rates and the levels of per capita incomes across countries. The magnitude of the adverse impact of the brain drain depends on the contribution of the quality of differing levels of human capital in the production process" (Haque, Se-jik Kim 1994). However - what is customary for the approach under consideration - it turns out that this claim appears to be as controversial as you can get. Some researchers have found that "the return to an additional year of schooling is higher for individuals from disadvantaged families than for those from advantaged families [... But- note: J. T.] several studies have found that students from advantaged and disadvantaged backgrounds make equivalent gains on standardized tests during the school year, but children from disadvantaged backgrounds fall behind during the summer while children from advantaged backgrounds move ahead" (Krueger, Lindahl 2000). On the other hand, Psacharopoulos (1994) holds that there is a higher return to primary schooling than to secondary or tertiary schooling, "which also suggests that disadvantaged children benefit more from additional human capital investments" (Krueger, Lindahl 2000).

low-income families, although children from higher-income families still depend on the good will of their parents to gain access to those resources. Limited access to credit markets means that the costs of funds are higher for the children of the poor, and this limits their enrollment in college. This view apparently explains the evidence that shows that the enrollment response to the rising educational premium that began in the late 1970s or early 1980s was concentrated in the top half of the family income distribution. Low-income whites and minorities began to respond to the rise in the return to college education only in the 1990s. The reduction in the real incomes of parents in the bottom half of the family income distribution, coupled with a growth in real tuition costs, apparently contributes to growing disparity between the college attendance of the children of the rich and of the poor.

An alternative interpretation of the same evidence is that long-run family and environmental factors play a decisive role in shaping the ability and expectations of children. Families with higher levels of resources produce higher-quality children who are better able to perform in school and take advantage of the new market for skills.

Children whose parents have higher incomes have access to better-quality primary and secondary schools. Children's tastes for education and their expectations about their life chances are shaped by those of their parents. Educated parents are better able to develop scholastic aptitude in their children by assisting and directing their studies. It is known that cognitive ability is formed relatively early in life and becomes less malleable as children age. By age 14¹³ (some would say age 8), intelligence as measured by IQ tests seems to be fairly well set (see the evidence summarized in Carneiro and Heckman (2003).

Another researcher expresses a similar idea in his own, rather peculiar (making use of human capital jargon) manner, which unwittingly reveals yet one more distinction between capital as we know it and what is dubbed capital in the literature under consideration: "Since human capital cannot be offered as collateral, it is more difficult to finance investments in human capital. Hence, wealthier families tend to invest more than poorer families through internal financing. In general, white families are relatively wealthier than black ones and are more likely than blacks to have relatively low rates of interest. Since lower interest rates often imply greater acquisition of human capital, people with relatively high interest rates will spend less time investing and will tend to earn less and remain poor" (Wu 2007).

The above overview of what to many may appear as evident facts has been however badly needed because human capital analysts tend to ignore them. To illustrate this ideologically motivated blindness, "the critical source of social wealth has shifted over the last few hundred years from land (at the end of the 18th century) to physical capital (at the end of the 19th) to, today, human capital—education and cognitive ability. This development is not an unmixed gain from the standpoint of economic equality. The ability to acquire and deploy human capital is a function of intelligence, and intelligence is not only unequally distributed but also, to a significant degree, heritable. As Charles Murray and the late Richard J. Herrnstein argue in *The Bell Curve*, an economy that rewards sheer brainpower replaces one old source of inequality, socioeconomic advantage, with a new one, cognitive advantage" (Demuth 1997).

As argued earlier, the process and indeed the very opportunity to acquire mental abilities is socio-economically conditioned. Yet the human capital literature generally fails to take account of class conditioning of processes of acquiring, or investing in what they dub human

¹³ In fact, this common view is inconsistent with more up-to-date brain research which indicates that human brain continues to form new neural connections essentially throughout the entire life.

capital, which accounts for otherwise odd theories advanced within that literature. One such far-fetched theory argues that “the demise of the capitalists-workers class structure reflected a deliberate transformation of society orchestrated by the capitalists in reaction to the increasing importance of the human capital of workers in sustaining their profit rates. [...] the process of capital accumulation gradually intensified the importance of skilled labour in the production process and generated an incentive for investment in human capital. Due to the complementarity between physical and human capital in production, the capitalists were among the prime beneficiaries of the accumulation of human capital by the masses. They therefore had the incentive to support public education that would sustain their profit rates and would improve their economic well-being, although it would ultimately undermine their dynasty’s position in the social ladder” (Galor, Moeve 2003).

This bold statement, however, is erroneous both on logical and substantive grounds. The logical fallacy, in the form of non sequitur, is involved in the transition from the claim regarding the importance of skilled labour to one announcing the relevance of human capital. The former proposition by any means entails logically the latter; if it seemingly is the case, this is so due exclusively to the use in the second proposition of the word human capital instead of labour skills, which procedure, contrary to the authors’ intent, brings into relief the redundancy of their favourite term, as the latter adds nothing to the explanation put forth.

In addition, the authors are not familiar with the real history of the capitalist mode of production. Far from perceiving professional managers and other educated employees as a threat to their established positions, the process alluded to by the above-mentioned pair of authors reflected the transition from the stage where the dominant form of running business was an owner-managed firm to one in which the key form of business enterprise became the joint-stock company, or corporation of typically dispersed ownership and managed by the professional executive staff.

Even more importantly, the authors commit a blunder of reducing the concept of class structure to a bipolar hierarchy. They are wrong on both counts; no, including capitalist, class structure cannot be brought down to a two-class model, and, more broadly, the concept of class structure has nothing in common with that of stratification - which indeed is a hierarchical system, which amongst other reasons, underlies its specific identity, as compared with class structures whose components are related to one another by a more complex set of relationships. In sum, theoretical, logical, and historical failure.

In addition to the substantive considerations mentioned above, it must be pointed out that the manner of putting the above-mentioned key theorem of human capital theory often involves logical flaws. Cf, e.g., the vicious circle present in the following argument: “The central proposition in this paper, referred to as the human capital hypothesis, is that workers whose skills place them in the lowest range of the wage distribution tend to possess the smallest endowments of technology-using skill, and hence experience the largest shortfall in wages.

Estimates of a model of hourly earnings, using quantile regression and based on samples of males from the Current Population Survey for 1988 through 2005, offer support for the human capital hypothesis” (Zimmer 2008).

His hypothesis, or proposition, for that matter, boils down to a scarcely eye-opening claim that those who have the lowest wages earn the lowest wages.

II. 8. HUMAN CAPITAL THEORY AND OWNERSHIP OF LABOUR POWER

The question of the relationship of human capital and ownership of labour power has already been mentioned, and one could cite many a formulation that even explicitly refer to the rent theory of ownership, such as “physical capital, human capital, and other sources of non-earned income” (Schultz 2003). Yet the distinction introduced in the discussion below allows us to examine the issue in more depth.

Much of the empirical research on the topic of human capital has analysed the relationship between education and wages. This focus on education is due to the abundance of high-quality data sources with information on both education and wages.

For example, analysts using cross-sectional data from the Current Population Survey (CPS) have found that individuals in the United States receive earnings that are approximately 10 percent higher for every additional year of schooling they have completed.

Kenneth I. Wolpin [...] shows that, over the 15-year period between ages 25 and 39, a male college graduate earns 80 percent more than a male high school graduate without any college, and a male high school graduate earns 57 percent more than a high school dropout.

However, empirical research on training—the other key component of human capital—has lagged research on the economics of education. The human-capital model yields straightforward predictions about the relationship of on-the-job training to wages, wage growth, and job mobility [...]

This article [...] summarises the empirical training literature, with a special focus on the contributions that analyses of the data from the 1979 cohort of the National Longitudinal Survey of Youth (NLSY 79) have made to that literature. Models of competitive labour markets imply that wages paid to workers reflect their productivity. For example, if education makes workers more productive, then higher wages are paid to more highly educated persons. Similarly, if on-the-job training makes workers more productive, then trained workers should receive higher wages than workers with no training. But education and on-the-job training differ in one key aspect: most workers finish their schooling before entering the labour market, whereas most on-the-job training occurs during a worker’s tenure with an employer. While education and on-the-job training are both productivity-enhancing investments, they potentially differ with regard to whether the worker or the employer pays the costs.

Any investment in human capital involves current costs and future benefits. The costs associated with on-the-job training involve both direct costs, such as the salaries of the persons doing the training and any costs of materials, and indirect costs, such as the cost of taking trainees away from their current productive tasks. The benefits of on-the-job training accrue to both the firm providing the training and the worker receiving the training: because the worker is more productive after the training, the firm benefits from higher productivity and greater output, and the worker benefits from his or her higher productivity in the form of higher wages. (Frazis, Spletzer 2005)

Indeed, the authors cited above are much like that hero of one of Moliere’s comedies who was astonished to hear at his death-bed that all his life he was talking prose. However, the economists concerned are probably not aware that they are talking ownership theory. This is equally true of their claim that. One key theoretical issue regarding on-the-job training concerns the division of these costs and returns between the firm and the worker. Gary Becker made contribution to this cost-sharing issue by defining two types of training: general training and specific training. Completely general on-the-job training is training that provides the worker

with skills that are productive at firms other than his or her current employer. Examples of completely general training are learning to use a word-processing or data-processing computer programme that is available for purchase by any firm, pilots learning to fly a type of jet airplane that is in the fleet of several airlines, and doctors learning a new surgical technique that could be conducted at any hospital. By contrast, completely specific on-the-job training is training that enhances the productivity of the worker at only the firm providing the training. Examples of completely specific training are astronaut training (presumably specific to the National Aeronautics and Space Administration), learning to drive a tank (presumably specific to the U.S. Military), and learning to operate a machine that was developed and is used by only one manufacturing firm to produce its product. In the real world, almost all training involves a combination of both general and specific skills.

In a competitive labour market, workers are paid for the skills they possess. Becker reasoned that, because general training provides skills which are useful at all firms, the firm offering the general training will need to pay the trained worker a wage that reflects these skills; otherwise the worker will leave the firm to receive a higher wage at a different firm. Anticipating this possibility, a profit-maximizing firm will not pay any of the costs of general training because it cannot extract any of the returns from the training. In that case, the worker will pay all the costs of the general training—not just the direct costs, but also the indirect costs that reflect the worker's lost productivity to the firm. Human-capital theory thus predicts that, relative to workers who do not receive training, workers who receive general training will be paid lower wages while receiving the training and higher wages after the training is complete. (Frazis, Spletzer 2005)

The human capital theory's predictions do not hold up empirically, however; there is considerable evidence that “firms bear the costs of a good deal of training for workers, often including general skills training. Evidence suggests that this maybe explained in part by labour market frictions which may cause a widening gap between the marginal value product of workers and their wages as workers' skill increases” (Acemoglu and Pischke, 1999; Buren 2005).

A number of researchers have examined the effects of such workplace training. Bartel (1994) presents one of the first attempts to estimate the effects of private training on productivity using firm-level data, using a 1986 sample of 495 manufacturing firms. The key explanatory variable of interest in her analysis is an indicator for whether the firm provides any formal training to employees (but not the actual amount spent on training). She finds that the provision of training programmes between 1983 and 1986 is positively correlated with firms' 1986 sales per employee. Holzer (1996) analyse data for 157 manufacturing firms in the United States that had applied for state subsidies to support private training programmes. They find that receipt of a training subsidy increases training hours within a firm by a factor of two to three in the short term, and reduces output “scrap rates” by around 13 per cent (corresponding to a savings of between \$30,000 and \$50,000 per year). The survey does not identify the training costs actually borne (invested) by the firm” (Buren 2005).

Human capital analysts claim that they are “able to disentangle the question of whether training generates the performance effects or whether it is good performing firms that can afford training (i.e. the endogeneity problem between training and performance). The most compelling evidence that employers benefit from training investments is presented in several papers that link training investments with changes in productivity, profitability, and stock market performance. In the majority of these studies the direction of the relationship is established, i.e. we can, with reasonable confidence, maintain that training generates the performance effects and

not the reverse. Among the studies that provide the strongest evidence that training generates gains for employers are the following: Barrett and O'Connell (2001) based on 215 Irish firms Dearden, Reed, and van Reenen (2000) based on 94 British industries over 12 years Groot (1999) based on 479 Dutch firms Bosworth and Loundes (2002) based on 3,569 Australian SMEs.

Bassi, Harrison, Ludwig, and McMurrer (2004) based on 388 US stock exchange-listed firms from the standpoint of accounting for training investments, these studies provide evidence that companies not only invest in training but also reap the benefits from these investments. A general conclusion from the above-cited studies is that training generates gains for employers over and above other human resource management practices at the firm. "Another important aspect of these studies is that they are documenting the effects of training the years following the training investment. That the training effects materialize with considerable lag suggests that these transactions are associated with future economic benefits for the enterprises, which is a fundamental criterion for recognising an asset in most accounting standards around the world.

A question that is still very much open to debate is to what extent firms benefit from general training investments. Studies are not consistent on this issue: for instance, one study reports larger gains from general training, whereas another study reports larger gains from specific training. However, we generally see larger effects from formal than informal training both on employee earnings and company productivity suggesting higher returns to more structured training programmes" (Hansson 2001).

Approaching the issue through a single and narrow at that analytical lens, as he does, Hansson (2001) is unable to see that what he deems the validation of human capital perspective can be accounted for in other theoretical terms. The lag between the moment of training and its practical effects may well be due to the initial difficulty in matching a newly trained employee with the appropriate level and kind of technology and work organisation which has been presumably left unchanged. The process of correcting the initial likely mismatch does take time. And there where the rub lies, without any need to invoke human capital. Quite the contrary, the whole process is much better served by the terminology of labour power. And this is not the end of problems inherent in human capital theory.

In general terms, it is held (note the nomenclature) that "there is a difference between (1) the property rights a person has to her or his own earnings (the lifecycle theory), and (2) the rights of the employer to excess profits generated by investing in human resources. The former uniquely belongs to the individual, while the latter is a property of the firm" Abdul-Khalik (2002). There is a need, however, to account of specific combinations of "investors" and beneficiaries. Well, enough has been said above about misconceptions involved in the notion of employees as investors to be able to give an immediate answer to the following question: "dass" the investor metaphor acts as a Trojan horse breaking the walls of managers' minds and spreading useful ideas about people management. (Davenport, 1999: XII)

We don't know about the precise content of managers' minds, albeit at the face of it they have become wholly infused with human capital jargon. What is, though, entirely clear, at least in our view, is its harmful rather than useful import.

The disentanglement of ownership benefits accruing to particular parties involved is not made any easier by the fact that: Sharing the costs and returns of specific training is more complicated. On the one hand, assume, for the moment, that, as with general training, a worker pays all the costs and receives all the benefits of specific training. In such a case, a worker who might be fired or laid off after receiving the training would receive no future returns from his or her

investment in specific training; thus, the worker would have less incentive to pay for the training, because the decision to lay the worker off is made by the firm. On the other hand, assume that a firm pays all the costs and receives all the benefits of specific training. In this case, the firm would receive no future returns from the investment if the trained worker quit for another job; thus, the firm would have less incentive to pay for the training, because the decision to quit is made by the worker. The solution to this dilemma is for the worker and the firm to share the costs and returns of specific training, with the exact division of the returns depending upon the wage elasticity of the worker's propensity to quit and the firm's propensity to lay the worker off. [...] The sharing of the costs and returns to training has implications for worker mobility. Workers who have received specific training have higher productivity at their current employer than at other employers, and their wage at the current employer is higher than the wage they could obtain from other employers.

This asymmetry results in workers with specific training having lower probabilities of quitting than workers with no specific training. (Frazis, Spletzer 2005)

While the human capital scholars boast that the above-mentioned outcome corroborates their theory, as a matter of fact this outcome, as other ones, are much better theorised by the approach to economic ownership discussed earlier. The employees in question, whilst retaining the legal ownership of their labour power, in fact find their ownership limited in economic terms, because, despite they can still freely dispose of their labour power, in practice, owing to powerful economic incentives economically ascribed to their employing organisations, somewhat similarly to feudal SERFS. The framing of a given labour power in such terms is in fact vindicated by the theory under consideration itself, as it stresses that such a labour power in other occupational context is depreciated, that is, Its economic property lost:¹⁴ "Human capital

¹⁴ That the losses incurred are very real, is shown by the following, real-world example: "As a group, displaced workers from downsizing industries experienced a decline in average earnings of 15 1/2 percent. For the two-thirds of displaced workers switching industries, the decline in average earnings was larger (20.8 percent) than for workers not switching industries (5.0 percent). Thus, the implied loss of human capital is substantial" (Figura, Wascher 2010). In the same vein, one could demonstrate the analytical relevance of the concept "labour power" to some special cases, wherein human capital analysts reluctantly move beyond their standard tool kit. Thus, regarding the specific case of China, In this country, a prominent institutional factor in labor markets is hukou system. As a household registration system, hukou serves as a regional "passport" and effectively differentiates people from rural or urban areas and migrants from native residents. It was used as a political tool to control labor mobility during the prereform period. It has since been employed by local governments to protect welfare benefits of local residents and to discriminate against migrant workers in local labor markets, which suggests its conceptualisation in terms of certain definite limitations imposed on the ownership of labour power. Many scholars have modeled the effects of the hukou system on earnings differentiations. For example, Chan argued that the hukou system represented a pivotal factor of social inequality. In modeling the impact of hukou system, Liu identified that hukou was responsible for the rural-urban income differential in China. Earnings determinants in migrant labor markets include not only human capital variables but also non-human capital variables. Many studies support this hypothesis. For example, using information on earnings from the 2003 general social survey of China, Wang, Oropesa, and Firebaugh (2013) concluded that while the earnings advantage of permanent migrants depends more on human

and job search models are built on the assumption that specific skills are tied to a firm or an occupation. This assumption implies that specific skills are fully lost when an individual leaves that particular firm or occupation” (Gathman, Chönberg 2006). All the more that, as the authors write: Similarly, because the productivity of workers with specific training exceeds their wage, the employer is less likely to lay off workers with specific training relative to workers with no specific training. By contrast, because workers with general training have the same productivity at the current employer as at other employers, and because the wage they receive from their current employer equals the wage they would expect from other employers, the provision of general training does not lower expected probabilities of quitting. Similarly, in the simple model presented here, firms could replace a worker with completely general training without loss of any productivity, so the provision of general training does not lower expected probabilities of layoffs. (Gathman, Chönberg 2006)

That the above-mentioned distinction refers in actual fact to labour power, is shown, *inter alia*, by the following, otherwise useful (barring some exceptions, like that concerning knowledge of politics¹⁵ whose universal relationship with workers’ enhanced productivity is rather enigmatic) description of what in reality consists of attributes of labour power: “Education and training increase productivity in a multitude of ways. Some of them are quite general in their effects. For example, mathematical and logical skills, communications techniques and practices, knowledge of business law and political processes raise productivity in the production of almost any good or service. Thus, we refer to an important category of education and training that is general in nature. Other kinds of education and training are specific to particular industries, occupations, and even to particular enterprises. For example, occupational-specific education courses provide instruction in business administration, data processing, medicine, the law, and so on. Moreover, few individuals enter the labour market with sufficient skill to perform a job as efficiently as an experienced worker. It is necessary to gain much knowledge of how particular occupations are performed and the practices of particular enterprises through training provided on the job by the enterprises that employs a worker” (Belton et al. 1996).

Apart from its theoretical limitations, as manifested in its inability to pinpoint the real object of employee ownership, human capital theory suffers from substantive weaknesses, stemming from its dogmatic sticking to the conception of specific human capital. Meanwhile, the evidence presented by (Gathman and Chönberg 2006) suggest that specific skills are more portable than previously thought. The researchers concerned couch their findings still in the language of human capital approach: “Human capital accumulated in the labour market is not fully lost if an individual leaves a firm or occupation. On the contrary, task-specific skills are an important source of wage growth over the life-cycle, in particular for university graduates”.

capital than on political capital, political capital and human capital jointly affect earnings in specific economic sectors. Thus, human capital researchers, even coming across some factors that cannot be brought down to their usual working paradigm, all what they can offer is just another term conceptualised in terms of the same paradigm, the only difference being its distinctive adjunct.-it to

¹⁵ Even more problematic is the claim to the effect that “ideologies [...] are likely to foster human capital accumulation, technological progress and economic growth” (Iyigun et al. 2001).

They point out that “only few studies adopt an approach similar to ours, and analyse whether specific skills are valuable in other occupations or industries. Shaw (1987) finds that skills accumulated in one occupation are valued in related occupations. Poletaev and Robinson (2004) provide evidence that wage losses after job displacement are lower if the main task on the job remains the same as prior to displacement” (Gathman and Chönberg 2006).

One should keep those facts in mind considering further conclusions drawn by the aforementioned authors who write that:

In sum, this simple, yet elegant, human-capital model has several testable predictions. First, training lowers the starting wage: during training, a worker accepts a lower wage relative to a worker not receiving training, all other things being equal. Second, training raises future wages at the employer providing the training: a worker who has received on-the-job training should receive higher wages relative to a worker with no training—again, all other things being equal. Third, by definition from the preceding two predictions, training raises wage growth at the employer providing the training. Fourth, the foregoing three predictions vary in magnitude as a function of whether the training is specific or general. Finally, specific training lowers worker mobility, whereas general training has no effect on worker mobility, all other things being equal.

These testable predictions provide the framework for empirical analysis. It is obvious that several demands are being placed on the data. First and foremost, there needs to be information on training and individuals’ wages. Furthermore, longitudinal microdata are necessary for analysing wage growth and mobility.

Finally, the information needs to be quite detailed in order to distinguish general training from specific training. The NLSY79 data satisfy all these criteria and make up one of the few data sets that provide detailed longitudinal information on all the necessary analytical variables. It is not surprising, then, that much of what we know about on-the-job training has come from analyses of the NLSY79 data.

Before we turn to the empirical findings, the importance of the phrase “all other things being equal” needs to be mentioned. A common finding from all data sets with training information is that individuals who receive training are not a random sample from the population of all workers. For example, those who are college educated and those with higher ability are more likely to receive training. This nonrandom selection affects how we interpret the empirical analysis that follows. (This issue is more fully explained later). [...] Early on in the development of human-capital theory, economists recognised that on-the-job training was an important source of investment in human capital.

Because on-the-job training data were not available, the earliest attempts to measure such training were indirect. As has been noted, models of competitive labour markets imply that workers will be paid in accordance with their productivity. The tendency of wages to increase with labour market experience was interpreted as evidence of training-induced increases in productivity. With additional assumptions, the wage-experience relationship could be used to infer an investment path and returns to the training investment.

Mincer’s 1962 article attempted to estimate the amount of training by comparing the earnings path of individuals with different amounts of education and assuming that returns to training were the same as returns to schooling. Mincer’s 1974 book was probably more influential; in it, he showed that if time spent in training increased the logarithm of wages linearly, and if the percentage of working time spent in training declined with experience in a linear manner,

then wages would be well described by a quadratic function of experience. The quadratic earnings function was found to be a fair approximation of earnings and won wide acceptance. (Frazis, Spletzer 2005)

Interestingly enough, the scholars in question acknowledge that This evidence was clearly imperfect. Moreover, in the late 1970s, economists developed other theories to explain the tendency of wages to rise with experience, ranging from improvements in job matches through a worker's career to firms tilting their wage profiles to discourage shirking or encourage more stable workers to apply. Evidently, more direct measures of on-the-job training were needed.

One such measure was included in the Panel Study of Income Dynamics (PSID), a longitudinal survey administered annually since the 1960s. In 1976 and 1978, the PSID asked the question, "On a job like yours, how long would it take the average new person to become fully trained and qualified?" Articles by Duncan and Hill in 1965 and James N. Brown in 1989 used this question to identify periods of on-the-job training and adjust earnings equations accordingly. The longitudinal structure of the PSID allowed Brown to directly examine the effect of training on wage increases, rather than inferring wage increases from cross-person comparisons. Both articles found a substantial effect of training on wages, providing evidence for the human-capital interpretation of wage increases. (Frazis, Spletzer 2005)

This judgment is a typical partial half-truth, since it does not take account of the possibility of alternative interpretations, including that provided by the theory of labour power. From its vantage point it is evident not only that higher skills may lead to better wages, both for ascriptive (whose remuneration is based on specific characteristics of labour power such as seniority, qualifications, etc.) and achievement-based labour power (whose compensation depends on effects of work done),¹⁶ but they boost the value of labour power¹⁷ which, assuming that its price reflects that fact, leads to pay rises as well. For most practical purposes, the said distinction would be related not only to a class division, but also to the payroll nomenclature, as shown, amongst other claims, by the following statement whose authors, by the way, gloss over the fact that the terms used suggest their relationship with labour power, and not with capital, human or otherwise. "characteristics of human capital—such as wage and salary profiles—should be taken into account when building portfolios for individual investors" (Peng Chen et al. 2005).

The authors cited above go on to say that However: The PSID question clearly affords only a limited measure of on-the-job training. As Duncan noted, the intensity of training during the training period may vary between persons with identical answers to the question, and the type of training—formal, informal, or learning by doing—is completely unspecified.

Aside from the NLSY79, other attempts to measure on-the-job training in surveys of individuals include earlier cohorts of the National Longitudinal Surveys(NLS) and supplements to the CPS in 1983 and 1991. Lee A. Lillard and Hong W. Tan used the 1983 CPS and the early

¹⁶ Failing to take account of this distinctions accounts for inconclusiveness of some results of human capital studies, e.g. : "estimates of the returns to firm tenure find conflicting estimates (Abraham and Farber, 1987; Altonji and Shakotko, 1987; Altonji and Williams, 2005; Topel, 1991).

¹⁷ It may seem surprising that even scholars of human capital persuasion deliver evidence confirming the robustness of this alien for them concept; Coelho and Ghali (1971), Bellante (1979), and Roback (1988) showed that costs of living are important determinants of inter-regional wage differentials in the U.S.

cohorts of the NLS to examine training and its effect on labour market outcomes. (10) The CPS supplement asks what training was needed for the respondent to obtain his or her current or previous job and inquires about training to improve skills on the current job. Because the CPS is not a longitudinal survey and because the period during which the training took place is unclear, only the association of training with differences in wages between persons (which is substantial) can be examined; wage changes due to training for a given individual cannot be tracked.

The training questions in the earlier cohorts of the NLS are broadly similar to, but less extensive than, those in the NLSY79 (and the employment data in the earlier cohorts are not as good). Moreover, they cover only the “longest” training event between surveys, so they do not provide a comprehensive record of formal training. Exploiting the longitudinal nature of the NLS to examine the effect of training on wages several years later, Lillard and Tan found evidence that training does depreciate. [...]

The most frequent type of training is formal company training (37.5 percent of all training spells); noncompany seminars or training programmes also are a frequent type of training (34.2 percent of all training spells, broken down into 18.4 percent consisting of seminars or training programmes outside of work, and 15.8 percent seminars or training programmes at work run by someone other than the employer). Vocational or technical institutes are the fourth most-frequent type of training (9.7 percent of all training spells). [...] this question about the type of training provides important information about the generality of training.

The next question in the training sequence asks who paid for the training program. The most frequent response is “the employer,” who pays for 73.9 percent of all training spells.[...] many researchers restrict their analyses to employer-paid training spells; the human-capital model is an on-the-job training model, and deleting nonemployer paid spells of training aligns the theory with the empirical work. [...] the mean completed training spell lasts 5.7 weeks and 20.1 hours per week. [...] half of all completed training spells are less than or equal to 35 total hours, but 5 percent are greater than 520 total hours. Peng Chen et al. 2005)

Lisa Lynch’s article in the *American Economic Review* (Black, Lynch 1986) is the most prominent early study using NLSY79 data to examine the effect of training on wages. Lynch uses data from 1980 through 1983 to estimate the effect of training on 1983 wages for youths who had completed their education by 1980 with less than a college degree. She classifies training as on the job, off the job, and apprenticeship, and she [...] estimates both an equation for 1983 wages and an equation for wage growth from 1980 to 1983. The wage growth equation is used to eliminate possible selection bias in the wage-level equation: workers who receive training may have some unobservable characteristic, such as high ability, that is positively correlated with both wages and training. In that case, because more able workers would get trained, comparing wage levels of different workers would bias wage differentials between trained and untrained workers. But examining wage changes for a given worker will correct this source of bias if ability is fixed over time for a given individual. Lynch’s wage-level equation implies that off-the-job training and apprenticeship training from previous employers, and on-the-job training and apprenticeship training with the current employer, significantly raise wages. In addition, the wage growth equation implies that off-the-job training and apprenticeship training raise wages, but that on-the-job training has no effect on wages.

In a later study paralleling Lynch’s methods, Goldsmith et al. (1997) use data from the 1986-90 surveys to measure the impact of training on wages. Unlike Lynch, they are able to include in his analysis all training spells, whether they were less than or greater than 1 month

in duration. Their 1990 wage-level equation yields no statistically significant effect of any form of training when training is measured continuously, but does show some significant effects of company training and off-the-job seminars when training is measured in terms of its incidence. His results for wage growth between 1986 and 1990 are similar.

Daniel Parent uses a specification similar to that of Lynch and Veum, with data from the 1979-91 surveys. Although the wage growth equations in the earlier papers eliminate bias due to unchanging personal characteristics, Parent notes that jobs with higher wages may also have more training irrespective of the individual. Parent gets around this problem by using information on the deviation of the stock of training from within-job means. He finds fairly substantial effects of both off-the-job and on-the-job training. His correction for job bias substantially reduces the effect of apprenticeships, although the effect of previous jobs' apprenticeship training remains statistically significant.

Paul Lengermann (as reported in (Frazis, Spletzer 2005) used the NLSY79 to examine the question investigated by Lillard and Tan: How does the effect of training on wages evolve over time? Unlike those researchers, Lengermann examines wage growth in contrast to wage levels, so as to avoid bias due to the differing abilities of workers. He examines both spells of training that lasted 4 weeks or longer (available throughout the sample) and spells of training of less than 4 weeks (for which detailed information is available only after 1986). His data cover 1979-93, and his results indicate that (1) long spells of company training have substantial effects on wages and (2) those effects do not depreciate—indeed, they are estimated to increase from 4.4 percent in the first year to 8.2 percent after 9 years. The effect of long spells of school-based training is not statistically significant, although it also does not appear to depreciate. Short spells of training, perhaps not surprisingly, have less consistent effects. “So far, this article has concentrated on whether training increases wages by a statistically significant amount, rather than discussing the economic significance of the increase. This approach reflects the emphasis in the papers presented. Another question is, “Considering training as an investment, how does the rate of return compare with that from other investments, such as schooling?” (Frazis, Spletzer 2005).

Harley Frazis and Mark Loewenstein investigate this question, using data from the 1979-2000 surveys of the NLSY79. Their analysis is restricted to training at least partially paid for by the employer. [...] Like Parent, Frazis and Loewenstein control for jobs by restricting their investigation to within-job wage changes.

Frazis and Loewenstein show that estimates of the effect of training are highly dependent upon the assumed functional form of the relationship between wages and training. They find that the best-fitting functional form is one in which the logarithm of wages increases proportionately with the cube root of training. Using linear hours instead of the cube root results in a drastic underestimation of the effect of training at typical values, which may explain the insignificant effects found in some of the aforementioned papers. Frazis and Loewenstein find that, in their base specification, the median positive value of employer-financed training of 60 hours increases wages by about 5 percent, which, when annualized, implies a rate of return of 159 percent. Frazis and Loewenstein consider several explanations for this very high estimated rate of return. Correcting for promotions (for which the NLSY79 collected data in 1988-90 and 1996-2000), direct costs of training, and heterogeneity in wage growth (as well as in wage levels) reduces estimated rates of return to 30 to 40 percent. While this estimate is still several times estimated rates of return to schooling in the literature, Frazis and Loewenstein note that returns to training appear to vary across jobs: managers and professionals have higher rates of

return than do blue-collar workers, for example. In the presence of such variation, estimated rates of return can be regarded as the return of training to the trained. However, they are likely to be greater than the return that could be realised by employees who did not receive training.

The most prominent early article analysing the empirical relationship between worker mobility and training was written by Lynch (Black, Lynch 1986). Using data from the 1979-83 surveys of the NLSY79, Lynch estimated the probability of leaving the first job as a function of tenure for individuals who have permanently left school. Her estimates show that young persons who received formal on-the-job training from their employer are less likely to leave their job, whereas those who participated in training obtained from for-profit proprietary institutions outside the firm are more likely to leave their job (although this latter effect is not statistically different from zero). These results are consistent with the human-capital model if one makes the straightforward assumption that on-the-job training provides firm-specific skills and off-the-job training provides general labour market skills.

In point of fact, the aforementioned distinction is too crude; evidence suggests that specific skills are tied to an occupation rather than to a particular firm. Several studies have shown that the coefficient on firm tenure in a wage regression declines if one controls for occupational or industry tenure (Gibbons, Katz 1991; Kambourov and Manovskij 2002; Parent 2000). Similarly, evidence from displaced workers demonstrates that wage losses are much lower if workers return to the sector of their pre-displacement job (Neal, 1999).

Further analysis of how training affects worker mobility is provided by Loewenstein and James Spletzer, who use NLSY79 data from the 1988-91 survey years. After controlling for individual and job characteristics, they find that individuals who have received company training have a job separation rate that is 8 percent lower than individuals without such training, and individuals who received school training (business school, apprenticeship, vocational or technical institute, or correspondence courses) have no differences in job separation probabilities relative to persons who did not receive school training.

The mean job separation rate in Loewenstein and Spletzer's sample is 53 percent. Assuming that company training is more specific than general and that school training is more general than specific, these empirical results are consistent with the basic predictions about worker mobility from the human-capital model. Loewenstein and Spletzer use their empirical findings to build on the predictions from the human-capital model. Because the returns to specific training are lost when a job match terminates, the model predicts that specific training should be selectively provided to workers who are less likely to leave the job. If there is uncertainty about workers' future mobility, and if information about the quality of the employer-worker match is revealed over time, it may be optimal to delay training as a means of avoiding making a costly investment in a worker who may soon leave the firm.

Such a decision to delay training may be optimal even though it entails forgoing the returns to training during the early part of the employment relationship. Loewenstein and Spletzer find that the NLSY79 data show a substantial amount of delayed training; for example, their estimates show that a similar proportion of workers get their first spell of training in their second year of tenure as in their first year of tenure. As part of his research mentioned earlier, Parent found that both on-the-job and off-the-job training at the current employer reduced a worker's mobility, while training at previous employers appeared to increase mobility, although by a lesser magnitude. For workers with more than one spell of employment, it is possible to correct for bias caused by differences across workers in propensities to leave jobs. When Parent makes this correction, the effect of training at the current employer is strengthened.

It is interesting to flip the training-mobility relationship around and ask whether individuals with higher expected future job separation rates receive lower amounts of company training. This is the question asked by Anne Beeson Royalty, who uses NLSY79 data from survey years 1980-86 in her analysis. (20)

She finds that a higher incidence of company-provided training is given to individuals with lower estimated probabilities of leaving the employer. Assuming that company training imparts firm-specific skills, Royalty's analysis shows that profit-maximizing employers target the provision of specific training toward those individuals who are less likely to leave.

Human-capital theory distinguishes between general human capital which is useful at many employers, and specific human capital, which is useful only at the current firm. Researchers have associated types of training that raise wages at both current and future employers with general human capital, and types of training that raise wages only at the current employer with specific human capital. Furthermore, types of training that reduce mobility have been associated with specific training. Much of the empirical work in the training literature has taken advantage of the wealth of information in the NLSY79 data to explore the measurement and theoretical implications of general and specific training.

The findings reviewed in this article up to now present a fairly consistent fit between the theoretical human-capital model and the empirical training results. From her wage-level estimation, Lynch finds that wages are raised by on-the-job training from the current employer, but not from previous employers, whereupon she concludes that on-the-job training is primarily specific. She also finds that off-the-job training taken before the worker's tenure on the current job does raise wages, consistent with such training being primarily general. Lynch's analysis of mobility leads her to a similar conclusion: that on-the-job training is more specific, whereas off-the-job training is more general; Loewenstein and Spletzer's analysis of worker mobility finds similar results. (Beeson Royalty 1996)

The one study mentioned that does not slot nicely with the theoretical model is Parent's- which finds little difference between off-the-job and on-the-job training, with similar returns for training provided by current and previous employers (consistent with general training) and with both reducing mobility (consistent with specific training).

A detailed analysis of the costs and returns to training within and across jobs was conducted by Loewenstein and Spletzer. (21) The motivation for this study was to analyse questions in the NLSY79 that ask about who pays for the training. Recall from the discussion of the human-capital model that there are two costs to employer-provided training: the direct costs, plus an indirect cost of lower wages during training. It is assumed that asking workers who pays for the training refers to direct costs only; it is a stretch to believe that noneconomists would think of indirect costs (lower wages due to reduced productivity) when answering this survey question. Loewenstein and Spletzer find that employers pay for 96 percent of formal company training spells. This percentage is not surprising, because formal company training almost surely has a large component of specificity and the human-capital model predicts that employers will share the costs of specific training with the worker. Loewenstein and Spletzer also show that employers pay for 42 percent of training spells in the aggregate category of "business school, apprenticeship, vocational or technical institute, and correspondence course." This aggregate category, referred to as school training in the discussion that follows, should have a large component of generality, and according to the human-capital model, employers should pay the direct costs of general training only if they can pass on the costs to workers by paying them lower wages during the training.

Thus, evidence contradicts the conclusion following from the theory of human capital to the effect that “firms will not invest into general skills of their employees due to their inability to collect the returns from such investments. Therefore, workers will pay the full cost of general training.

Yet, there is plenty of evidence indicating that firms voluntarily bear the cost of training, even if the acquired skills are largely general in nature. This is particularly apparent in countries with institutionalised apprenticeship systems. In Germany, for example, participants in the system (secondary school graduates) engage in part-time schooling and on-the-job training and receive upon completion a nation-wide accepted certificate that helps to make their skills marketable throughout the profession. Franz and Soskice (1995) estimate that German employers paid a net cost per apprentice of about DM 12.300 in 1985” (Kessler, Liilfesmann 2002).

Also Loewenstein and Spletzer find no significant evidence that workers receiving employer-provided training—either general or specific—accept lower wages during the training period. Whilst this finding may seem to contradict the human capital model, it is consistently found in the empirical literature—for example, by Lynch and Parent, as well as by researchers using training data from employer surveys. The most likely explanation for this anomaly is that it is due to differences between trained and untrained workers that are difficult to control for empirically. If workers who receive training have higher ability than workers who do not receive training, and if this higher ability is observable to the employer, but unobservable to the data analyst, then workers who receive training will have higher wages relative to workers who do not receive training. Even if training lowers the starting wage, as is predicted by the human-capital model, higher wages attributable to differences in ability may make a lower starting wage difficult to observe in the data when one compares wages of untrained workers with wages of workers receiving training.

The human-capital model predicts that if employers are paying both the direct and indirect costs of training, as the NLSY79 data suggest, employers should also be realising some of the returns. The empirical strategy that Loewenstein and Spletzer use to test this prediction is to compare the return to training when a worker remains at the employer providing the training with the return to training when the worker moves to a new employer. Loewenstein and Spletzer find that the return to training received from a previous employer is higher relative to the return to training received from the current employer when the training is arguably more general. Lengeremann reports a similar result for long spells of company training. In combination with the absence of a starting-wage effect, Loewenstein and Spletzer’s analysis shows that employers pay for some of the costs of general training and receive some of the returns. This finding is at odds with the standard human-capital model, but can be reconciled with several theoretical modifications to that model. For example, minimum wages, liquidity constraints, or contract enforcement considerations can result in the employer sharing the costs and returns of general training.

This evidence that employers share the costs and returns of general training has led researchers to seek additional questions that measure the generality of training. In 1993, for the first and only time, the NLSY79 included the question “How many of the skills that you learned in this training programme do you think could be useful in doing the same kind of work for an employer DIFFERENT than [current employer]?” There are five possible responses to this question: (1) all or almost all of the skills, (2) more than half of the skills, (3) about half of the skills, (4) less than half of the skills, and (5) none or almost none of the skills. In follow-up research, Loewenstein and Spletzer analyse the 1993 NLSY79 data and find that 63 percent of

workers receiving employer-provided formal training respond that “all or almost all” of the skills they learned at one employer are useful in doing the same kind of work for a different employer. This finding suggests that the skills individuals are learning in their employer-provided training have a large general component.

Loewenstein and Spletzer estimate wage and mobility equations with the 1993 general and specific training data as the key explanatory variable. Their wage regressions show, first, that there is no systematic relationship between the degree of generality of the training and its wage return in the job that provided the training and, second, that the return to training received from previous jobs exceeds the return to training received at the current job, for all degrees of generality. If these results are compared with those from a similar specification using data on the type of training instead of on the degree of generality, then the first result holds, whereas the second result holds for school training, but not for company training. This finding leads Loewenstein and Spletzer to discuss the pros and cons of the two training measures. They hypothesize that the type of training data conveys different information than does the self-assessed generality of training data. For training to be truly general, not only must the skills be useful at other employers, but also, other employers must observe and value the generality of those skills. The generality-of-training question in the 1993 NLSY79 asks the individual’s opinion about whether the skills learned in the training are useful elsewhere, but this is not equivalent to asking alternative employers about the transferability of skills. By contrast, the question on type of training not only proxies for the generality of the skills imparted by training, but also conveys information about how likely other prospective employers are to observe these skills. For example, school training might easily be certified for other employers to see its value, but it may be difficult for prospective employers to observe the usefulness of skills learned in company training.

Such reasoning leads Loewenstein and Spletzer to speculate that information on the type of training may be preferable to a directly asked question as a measure of generality. However, as they suggest, the evidence for such speculation is limited, and the research community would benefit from asking the question on degree of generality in more than 1 year. Training is not always a well-defined concept, and any survey’s measures of the incidence and duration of training undoubtedly contain measurement error; analysing the amount, consequences of, and statistical remedies for measurement error is a topic that is well worth exploring. (25) Finally, any distinctions there are among formal training, informal training, and learning by doing have been ignored in this article; the NLSY79 has asked questions regarding informal training, but economists have not yet studied the responses to those questions in depth. (Frazis, Spletzer 2005) Such gaps only reinforce our reservations regarding the mode of explanation in human capital terms. Its shortcomings are clearly manifested in the following claim: “consider Lou Gerstner’s move from being the CEO of RJR Nabisco to being the CEO of IBM. IBM offered Mr. Gerstner a lucrative package to move, notwithstanding the fact that he had no IBM or industry-specific experience, because the human capital he had accumulated elsewhere was central to what IBM needed in a chief executive” (Novos, Waldman 1997). This kind of explanation “explains” only because the relevant characteristics of a given executive’s labour power have been termed instead human capital, which transforms the whole procedure from substantive into purely linguistic, verbal. Similarly, in the following pronouncement several different terms referring to the same thing are used, but there is no reason given why, say, “people” should be called “human capital”, and by the same token, conversely, why “human capital” cannot be renamed as simply “people”:

It is widely perceived that human capital is becoming more important in production. It seems every firm claims that “people are our most important asset.”

Leading CEOs report that they spend very large fractions of their time on human resource management and consider it to be among their most important responsibilities. Knowledge, all of which is created by humans and much of which is embedded in peoples’ heads, is meanwhile asserted to be the key to competitive advantage and business. (Roberts, Van den Steen 2000)

And, incidentally, some human capital advocates seem to be aware of the said convergence, as evidenced by, e.g., the following formulation referring to “human capital or more colloquially, people” (Bukowitz et al. 2004).

Similarly, the leading consultancy, Deloitte Consulting advertises its Human Capital market offerings which are “developed by drawing upon their broad portfolio of core Talent and HR capabilities. The firm “offers proven solutions and frameworks to address their clients’ most important asset – people”. likewise, the following business text mentions “workforce”, “human resources”, and , finally, “human capital”, which clearly suggest that the rule of parsimony is not being observed here: “Human Capital Source corporations operates globally, leading the way to the ‘next’ wave of workforce analysis and practices. The company addresses the human capital decision making needs of corporate executives through training, consulting and speaking activities at various HR-focused events”(Business Wire 2004). Likewise, the authors of the subsequent statement take it for granted that the breadwinner is the carrier of human capital, but such self-evidence can apply only to the management mumbo jumbo, and not to social science. They ponder “how much life insurance a family unit should have to protect against the loss of its breadwinner” - which is justified by referring to the fact that “Life insurance hedges human capital” (Huang et al. 2008).

Statements such as this, and the following one alike show that the word human capital is in fact no scientific concept, but only a label arbitrarily sticked to such objects as “people”, “labour”, or “knowledge” which become “capitalist” only by fiat, because intrinsically have nothing in common with capital: “Human capital (knowledge and skills) can be broadly categorised into two kinds: the baseline knowledge and skills, and advanced knowledge and skills. This categorisation is similar to that used in the World Bank report which divides human capital into raw labour and skilled labour (Figure 7.1 of World Bank” (Hui 1985), or else: “we have moved from an industrial society, where the primary source of wealth was machinery, to a knowledge society, where the primary source of wealth is human capital. In essence, we have undergone a metamorphosis.

In the closing years of the 20th century, management has come to accept that people, not cash, buildings, or equipment, are the critical differentiators of a business enterprise.” The reality of the situation today is that 60 percent to 70 percent of a company’s expenditures on average are labour related. Data from the Brookings Institute will help to put the importance of the measurement and management of human capital/knowledge assets into perspective. In 1982, hard assets represented 62 percent of a company’s market value on average. By 1992, this figure had dropped to 38 percent. More recent studies place the average market value of hard assets in many companies as low as 30 percent. In other words, up to 70 percent of a company’s expenses may be related to human capital” (Weatherly 2003). This is the case of non sequitur, a logical fallacy disguised by not particularly clever word manipulation. And this kind of conduct is customary among human capital scholars and practitioners. In the following account the author refers to a diversity of phenomena that by no means need the human capital label, which is simply invoked by the author’s discretion.

In most mergers, due diligence teams led by investment bankers conduct extensive research into the value of a company's capital assets. But they pay scant attention to its human assets. [...] it is so surprising that little attention is paid to the human elements of mergers and acquisitions. Acquiring companies typically do not devote a sufficient amount of time to a thorough examination of the ingrained ways that a target company's executives, managers, and other employees go about getting their jobs done. Acquirers typically know little about the target executives' motivation and daily behaviour, and how they relate to each other - in short, they are utterly unfamiliar with the culture of the company they acquire. [...] By thoroughly examining the state of a target company's internal culture and the strengths, weaknesses, and potential of the people who manage it and work for it, a human capital audit can provide guidance as to whether a deal is worth undertaking, and at what price. (Carey 1999)

Similarly, the following "translation" bluntly shows that the modish label "human capital" is utterly redundant: "Adults (workers) need to work to earn income to raise their children and are Endowed with different human capital, [h.sub.t]. We assume that there are two types of workers: workers with low human capital, [h.sup.L.sub.t] (these are referred to as low-skilled workers) and workers with high human capital, [h.sup.H.sub.t] (these are referred to as high-skilled workers)" (Chen 2009).

The same labelling procedure may be applied not only to adult, but also child workers: International standards on children's work generally assume that work is incompatible with schooling and hinders human capital formation. These standards are based on ideals which have matured in high-income countries, and are not necessarily appropriate for children everywhere.

This article challenges the dichotomy between work and learning in children's lives. In practice, many children successfully combine work and school. Their work often comprises an important contribution to their families, and contributes to children's status within them; in some cases, work contributes to schooling by improving nutrition and meeting school-related expenses. More important is the contribution of work to a child's development: children learn life skills through work; such learning can sometimes be more important than the learning provided by available schooling, which is often of poor quality and has limited relevance to their situation (Bourdillon 2011)

Whether one does concur with that particular application of the idea of learning by doing or not, it is blatantly clear that, just as the author objects to certain notions which in his view hinder children's human capital formation, his own use of the concept "human capital" hinders rather than helps to comprehend the nature of the effects of children's work. Adult or child or juvenile, "workers" can alternatively be couched in terms of employees, or workforce, holders of labour power, but nothing in the way of descriptive power is added when one labels them "human capital", as in the following formula advanced as a measure of this alleged capital's contribution to the bottom line:

"Human Capital Cost [...] is simply the average pay per regular employee. The formula is:

Pay + Benefits + Contingent Labour Cost/ Full-Time Equivalents" (Caudron, Metrics 2004).

An artificial character of human capital theory can be gleaned from the following claim: Lin (1998) found that when an increase in wage taxation reduces the interest rate, time spent on human capital investment increases. An explanation for the uninitiated: this curious time spent on human capital investments means simply one's period of schooling. In the case of

regular, financial investment one would not use the length of time as a criterion for its estimation. Hence its presence in the context of human capital underlines the unnaturalness of the latter concept which, to put it bluntly, does not refer to any capital at all.

Poznan PHILOSOPHER OF SCIENCE Leon Petrazycki coined the term of the “the leaping concept” as one which is over-inclusive, too broad in scope, thereby obliterating the qualitative differences between the phenomena in question. This notion applies equally to the concept of human capital and social capital.

As regards the concept of human capital, one cannot but overlook its ambiguity. Becker in the entry written for the Small Encyclopaedia of Economics, writes that “the material forms of capital are not the only ones; education, computer course, spending on health care, lectures on the virtues of punctuality and honesty are also capital. However, because they raise earnings, improve health or develop a person’s good habits over the majority of the person’s life. Therefore, economists claim spending on education, training, health care, etc. to be investment in capital. These are called human capital ...” The ambiguity here lies in the inability to determine whether the author refers the concept of equity to education, health, etc. or to the efforts to gain or improve these.

This definitional vagueness is not eliminated by the fact that Becker claims further that education and training are the most important investments in human capital.

That the approaches in terms of skills and investments made to acquire those skills are divergent is indicated by the following observation: “Human capital (knowledge and skills) can be accumulated in various forms: education, working experience, innate ability, etc.” (Hui 1985). Of course, all kinds of innate ability are by definition not attained by any deliberate effort of its bearer, let alone by a money expenditure.

Our assessment above is also vindicated by the fact that such an ambiguity pertains also to other approaches to human capital, including some classical ones, like that of the founding father of political economy. He states: “Fourthly, of the acquired and useful abilities of all the inhabitants or members of the society. The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costs a real expense, which is a capital fixed and realised, as it were, in his person. Those talents, as they make a part of his fortune, so do they likewise of that of the society to which he belongs. The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which, though it costs a certain expense, repays that expense with a profit” (Smith, 1776 Book II, chapter 1).

Worse still, the concept of human capital becomes even more cloudy when its another semantic dimension is added putting in one bag a variety of personality traits, including both those that are likely to be formed through what the theory under consideration calls investments, and such which are themselves requisite to undertake the latter, e.g. “ability to learn”: Fitz-enz (2000: XII): The traits one brings to the job: intelligence, energy, a generally positive attitude, reliability, commitment

One’s ability to learn: aptitude, imagination, creativity, and what is often called street smarts,” savvy (or how to get things done)

One’s motivation to share information and knowledge: team spirit and goal orientation”. To add insult to injury, our concept’s vagueness is further compounded by the definitions which

frame human capital not in terms of investments or their target, but their financial result.¹⁸ “Human capital is defined as the present value of an investor’s future labour income” (Peng Chen et al. 2005) This definition shows glaringly that another crucial weakness of human capital approach lies in its inattention to class and property relations. It indeed makes sense to capitalise employee earnings, but only in relation to managers, not the rank-and-file. In the managers’ case such a procedure allows to estimate the portion of a manager’s income which is derived not from his or her work, but from the same source as incomes of shareholders. In this case indeed what is formally salary or remuneration goes far beyond the benefits that accrue to a given manager by virtue of her or his labour power. With reference to most of the workforce, however, this is clearly not the case, and they function in the relations of distribution as owners of sole labour power. In fact, in their case the reverse may well be the case, e.e. some part of their labour compensation reflect merely the above-mentioned ownership rather than ownership of equity capital, even if they are paid in part in shares. The rent theory of ownership includes a set of criteria for identification of formal and real ownership allowing to determine whichever is the case.

The kind of double meaning mentioned above is also present in the following approach: “In order to maximize individual utility, people make investments in human capital, such as education and on-the-job-training, which enhance their productivity and lead to higher wages. Any investment that is embodied in the person and leads to increases in productivity can be placed in this category, including language skills, labour market skills, choice of occupation, and geographic mobility” (Hurst 1997) - which the author cited terms “human capital variables”. This opens the way to classification of almost any decision made by a given employee as an investment in his or her human capital. Having a meal, taking an anti-cold tablet,¹⁹ taking an after-lunch nap, etc. – all can be seen as reproducing or producing human capital. In a popular child game, one is asked all kinds of questions, and must always reply: “tomato”. And with Midas’ powers whose every touch turned everything into gold, in human capital theorist’ minds, all things imaginable associate with human capital. Here is yet another example of the aforementioned over-inclusiveness of the concept: “private returns to human capital would be underestimated if based on an analysis of earnings rather than the hourly wage rate, because returns to earnings neglect returns to human capital consumed in the form of increased leisure” (Schultz 2003). Within the framework of socio-economic structuralism, as suggested above, there is no Chinese wall between estate relations and class relations, which is to say that the former can be encountered also within the economy, and, accordingly, extra leisure time is regarded as a non-economic property relation. Increased leisure may be result of class struggle, state or enlightened bourgeois initiatives, and not necessarily enhanced skills treated by the scholars in question, for their own obscure reasons, as a part of human capital. The ethnocentric Schultz’s claim seems to allude to the U.S. realities where there is no compulsory official holiday, but not others, e.g. European countries where such a practice is long guaranteed by law.

Another, even more clear example reads: “In general, as one's career progresses, a person sets aside a portion of their human capital and creates financial capital through savings and investments” (Peng Chen et al. 2005). Lest there be no misunderstandings, they add that “human capital is determined in part by earnings volatility”. Evidently, human capital is here conceived of as not skills, health, or other attributes of labour power, but as what they allow an individual to earn.

¹⁹ And indeed, Schultz terms “child nutrition, adult health, and schooling “three forms of human capital investment” (2003).

Recall, however, that within our approach the distinction between the economic and non-economic is unequivocally defined and strictly observed, not glossing over their interrelationships. Meanwhile, one intellectual (quantum, to use a jargon phrase) leap performed by the concept under investigation is across that boundary. It seems evident, but not to human capital theorists, that the concept of capital is applicable to the economy only. Meanwhile, they do not hesitate to violate that principle, stating, for example, that “the Federal Bureau of Investigation (FBI) is using these lessons and human capital flexibilities to transform to meet its evolving mission in the post 9/11 environment” (Mihn 2004: 1).

This is by any means an isolated claim; quite the contrary. Note, for instance, the following statement to the effect that “government counts some 1.8 million employees on its payroll. These workers are the government’s greatest asset—its human capital” (Walker 2000). In another paper of the same analyst the reader is told that “widespread shortfalls in human capital have undermined agency and programme performance. The federal government today faces pervasive human capital challenges” (Walker 2001: 1). To be fair, human capital exponents attempt to defend the use of their favourite concept in that particular context:

Those who run federal agencies must recognise that their people are a key asset if they hope to find workable solutions and respond appropriately to these emerging questions. An agency’s people will define its character and its capacity to perform. Federal agencies that do not strive to enhance the value of their people—their human capital—do so not just at their own risk, but at the taxpayers’ risk as well.

We [...] use the term human capital because—in contrast to traditional terms such as personnel and human resource management—it focuses on two principles that are critical in a performance management environment. First, people are assets whose value can be enhanced through investment. As the value of people increases, so does the performance capacity of the organisation, and therefore its value to clients and other stakeholders. As with any investment, the goal is to maximize value while managing risk. Second, an organisation’s human capital policies must be aligned to support the mission, vision for the future, core values, goals, and strategies by which the organisation has defined its direction and its expectations for itself and its people. (Walker 2000)

This defence, however, creates more problems than it solves. It is all very well to speak of employees in terms of values, but the problem is it is not known what to make of all this. The author cited explains that through investment, presumably in the form of training their value to clients and other stakeholders will be enhanced. Even better, the said value, just as in the case of capitalistic firms, shall be maximised. Again, because the crucial concept of value, to clients or other parties, is left undefined (the reader who would ask what the relationship of this kind of value to “core values” attributed to government as well is left in the dark), the concept of value maximisation is meaningless. This example vividly illustrates the perils of transferring concepts from the field of the private economy – where the notion of shareholder value is long established - to that of government that, firstly, belongs of course to the political rather than economic structure, and, secondly, is by definition publicly, and not privately owned.

Talcott Parsons carried out a devastating critique of the view according to which socialisation is the production of labour power. Human capital theorists go even further, not only child rearing, but apparently also the very giving birth to them is seen as a process of production of (this time round) human capital. “Our model introduces two investment-specific technology

parameters (one for the pre- and the other for the postindustrialization phase), which characterise the returns to human capital and may be seen as proxies for the returns to child quality” (Basu, Guariglia 2008). Another glaring instance of misapplication of the concept of capital concerns an area concerned with the destruction rather than creation of value. Thus, from the perspective under discussion it is entirely acceptable to refer to “human capital plans addressing military personnel and quality of life represent a positive step forward in fostering a more strategic approach to human capital management” (Wright, Mc Mahon 2011).

The said leaps are being accomplished not only in social space but also time. In an utterly ahistoric manner, for instance, human capital is believed to be found in:

The Ottoman empire;²⁰ “the military) was the most prestigious social profession in the early periods. By a method called *devsirme* (recruitment) the most healthy, clever, and physically well-shaped children were brought together in institutions - the *Enderun*. This was the main source of human capital for the *Janissary* army and other state bureaucracy. It was an efficient way of creating a strong army and dominant bureaucracy by the participation of individuals who are ‘rootless’ in the sense that they put the state at the very centre of their social life. To expand and protect its vast land throughout three ancient continents -Asia, Europe, and Africa - the Ottoman political system based on *continuous conquest* and *gaza* (holy war) made war-making and related activities the most important *and prestigious* profession. (Demir et al. 2004)

In a way, this should come as no surprise; in anthropology a substantivist approach which restrict the use of categories of a market economy to modern industrialised societies is overwhelmed by its formalistic rival that seeks to apply such categories even to the primitive economic formation of society.

II. 9. SOCIAL RETURNS TO HUMAN CAPITAL

An economist studying the issue under consideration states: After 40 years of research on the relationship between education and earnings, economists now have a solid understanding of the private benefits of schooling. But much less is known about the social returns to education, even though economists have speculated about the possibility of human capital Externalities for at least a century. Theory predicts that increases in the overall level of education can benefit society in ways that are not fully reflected in the wages of educated workers. Human capital spillovers may increase productivity over and above the direct effect of education on individual productivity. Furthermore, increases in education also may reduce criminal participation and improve voters’ political behaviour. (Moretti 1988)

The possibility that the social return to human capital differs from its private return has, according to human capital scholars, tremendous practical importance. For example, the magnitude of the social return to education is a crucial tool for assessing the efficiency of public investment in education, since state and local governments subsidize almost all direct operating costs of primary and secondary educational institutions. In fact, much of the argument for public education is based on the recognition that education not only rewards the educated individual, but also creates a variety of benefits that are shared by society at large. Paradoxically, but indeed only partially so, given the general failure of human capital theory to grasp the relationship of

²⁰ The same flaw pertains to its close relative, i.e. cultural capital, as the very title of the following book plainly shows: “The Conversion of Cultural Capital in Medieval Scandinavia” (Wolf 2010).

its object with economic ownership, human capital writers generally fail to notice an important part of those economic benefits.

There are, to be sure, exceptions, but even then the concept of ownership does not come into play: Part of the estimated private return to skills in the Mincerian literature is actually shared with the public sector through taxation. Mincerian rates of return estimates typically used pre-tax wages as the dependent variable. Therefore, these estimates do not distinguish between the parts of the return on education that are effectively captured privately versus publicly. Given that the effective taxation of the return on human capital is fairly high in Canada, as in most developed countries, there will remain a substantial gap between the return that is captured privately and the full social return, even if we find that the micro-Mincerian and macro-Mincerian returns are in the same range. This consideration alone strengthens considerably the efficiency case for public investment in post-secondary education. (Coulombe, Tremblay 2002)

The thing is, from the standpoint of the ownership theory espoused in the present work taxes represent the share of society at large in the private ownership of means of economic activity and labour power.

As suggested, the misleading (as implying their capital origin) term of social returns hides behind it ownership benefits, as the following account clearly shows: “Social benefits are normally ‘public goods’ in the public finance literature in the sense that consumption by one does not reduce the opportunities for consumption by others (e.g., public television).

Romer (1990) calls these “nonrivalrous” goods. The main development outcomes that are public goods to which education contributes to [...] These pure ‘public good’ social benefits, [...] to be a benefit, the benefit must be realised by some individual, even though he or she does not pay for it” (McMahon 2007), and the gratuitous nature is precisely what is underlined by our rent theory of ownership. The overlapping of the latter and the human-capital notion of social returns alias benefits goes to the point of underscoring by the latter (highlighted also by the rent theory of ownership) the historical character of those benefits: “Externalities generated by the education of others [...] include the contributions by the education of prior generations who benefit others in later generations including the contributions (or lack thereof) by parents and grandparents. It also includes the contributions of other historical, political, scientific, literary, and artistic figures who have raised our current income and well-being. (McMahon 2003)

Despite the significant policy implications and a large theoretical literature that assumes the existence of spillovers from education, empirical evidence on the magnitude of these spillovers is limited” (Moretti 1998).

This is the case because: “When estimating externalities, much of the existing literature treats education externalities as one aggregate mass, subtracting micro Mincer equation estimates from macro Mincer estimates without much thought as to analysing what these externalities are” (McMahon 2007).

Owing to such an approach and related reasons, the knowledge concerned is not only limited; it is also inconclusive. The earnings of educated individuals do not reflect the external benefits that affect society as a whole but are not captured by the individual. Such benefits are known as externalities or spillover benefits, since they spill over to other members of the community. They are often hard to identify and even harder to measure. In the case of education, some have succeeded in identifying positive externalities, but few have been able to quantify them; a recent review finds that empirical evidence is scarce and inconclusive, providing some

support for human capital externalities, but not very strong (Venniker 2001). These studies estimate externalities in the form of individual's human capital enhancing the productivity of other factors of production through channels that are not internalized by the individual (similar to Lucas' (1988) theory). As Venniker (2001) states, evidence is not unambiguous. In fact, some estimates give negative values, while "others give very high estimates" (Psacharopoulos, Patrinos 2002)

It is owing to this scant evidence, that human capital scholars, when comparing private and public benefits from education, etc., often confine themselves to rather abstract and general comments: "The social return to education can, of course, be higher or lower than the private return. The social return can be higher because of externalities from education, which could occur, for example, if higher education leads to technological progress that is not captured in the private. Return to that education, or if more education produces positive externalities, such as a reduction in crime and welfare participation, or more informed political decisions. The former is more likely if human capital is expanded at higher levels of education while the latter is more likely if it is expanded at lower levels. It is also possible that the social return to education is less than the private return. For example, Spence (1973) and Machlup (1970) note that education could just be a credential, which does not raise individuals' productivities. It is also possible that in some developing countries, where the incidence of unemployment may rise with education (e.g., Blaug, Layard and Woodhall, 1969) and where the return to physical capital may exceed the return to human capital (e.g., Harberger, 1965), increases in education may reduce total output" (Krueger, Lindahl 2000).

It is highly significant that research, limited as it is, produces no consistent positive results in that regard, which may be interpreted as a glaring evidence of the divergence of private and public interest intrinsic to capitalism, and the failure of that socio-economic system to tap into its creative potential. "The empirical evidence on this issue is quite limited, although Coulombe and Tremblay (2007) provide one, based on Canadian data, supporting the view that "the macroeconomic returns of education, in terms of higher per capita income, are comparable to individual wage returns. [...] we found that the increase in provincial per capita income resulting from higher average skills in the working-age population corresponding to one additional year of education is around 5 per cent".

This is very close to the increase in individual wages associated with an extra year of schooling, estimated by Psacharopoulos (1994) to be 5.2 per cent in Canada.

Using a similar methodology and data from fourteen OECD countries, Coulombe and Tremblay (2006a) estimated the macro-Mincerian rate of return to be around 7 per cent. Again, this is remarkably close to Psacharopoulos's average micro-Mincerian estimate of 6.8 per cent for OECD countries.

Using a new set of years of schooling data, corrected for various sources of measurement error, Cohen and Soto (2007) also find macro-Mincerian estimates in the same range as the micro estimates of Psacharopoulos (1994) in a broad set of about 80 countries for the period 1970-1990. They find that the aggregate return to an additional year of schooling in the population is approximately 9 per cent.

This study, and those of Coulombe and Tremblay (2006a; 2007), appear inconsistent with the presence of large human capital externalities, which is in line with the evidence provided by Acemoglu and Angrist (2001) and Ciccone and Peri (2006).

II. 9. 1. EDUCATION, PRODUCTIVITY, AND WAGES

In the face of our earlier comments, it comes as no surprise at all that “Empirically, the effect of human capital on aggregate labour productivity remains controversial. While some cross-country studies find that the effect is positive and substantial, others report small positive or even negative effects” (Ciccone, Peri-Bocconi 2004).

This statement, however, must be decoded.

Moretti goes on to say that: A large body of theoretical literature in macroeconomics and urban economics has argued that productivity spillovers are important determinants of economic growth. These spillovers arise if the presence of educated workers makes other workers more productive. In this case, an increase in aggregate human capital will have an effect on aggregate productivity that is quite different from the effect of an increase in individual education on individual productivity.

Using a unique firm-worker matched dataset, obtained by combining the Census of Manufacturers with the Census of Population, I assess the magnitude of productivity spillovers from education in U.S. cities by estimating plant-level production functions. (Moretti 1998).

While other studies have attempted to measure spillovers by looking at cross-city differences in wages, this is the first study to measure spillovers by directly focusing on firms’ productivity. I find that the output of plants located in cities that experience large increases in the share of college graduates rises more than the output of similar plants located in cities that experience small increases in the share of college graduates. Furthermore, I find that spillovers between industries that are in the same city and economically (or technologically) close are larger than spillovers between industries in the same city but economically (or technologically) distant. For example, I find that aggregate human capital in the high-tech sector of the city matters more for high-tech plants than aggregate human capital in the low-tech sector of the city; and aggregate human capital in the low-tech sector matters more for low-tech plants than aggregate human capital in high-tech plants. Notably, this result generalizes when I use three alternative measures of economic and technological distance: input-output flows, technological specialization as measured by distribution of patents across technologies, and frequency of patent citation. Importantly, the estimated productivity differences between cities with high and low levels of human capital appear to match differences in labour costs between cities with high and low levels of human capital remarkably well. Consistent with a model that includes both standard general equilibrium forces and spillovers, the productivity gains generated by human capital spillovers are offset by increased labour costs. (Moretti 1998)

What Moretti’s account clearly shows, is that the term suggesting that one deals with social benefits is misleading. Moretti refers to other privately owned firms’ supposed benefits from the employment of educated workers by other private firms, “social” being no misnomer in that context would call for some form of common ownership, or, to use a popular term, the commons.

The outcome of given econometric calculations is not surprising at all, given what we have learned as regards the socio-economic property relations, which, as we have pointed out, are mediated, among other channels, by the social division of labour.

It must be added, though, that such results have not gone unchallenged. “It is only when the new ideas and technologies come to the attention of other firms or their workers that there is an external effect. Early studies that claimed to find evidence of such spillovers, typically by

studying neighbourhood effects in local geographical areas, have been heavily criticized in recent years, however, and better empirical methods have shown these effects to be weak or absent” (Collins, Davies 2005) (see, for example, Acemoglu and Angrist 2000; Isacson (2005). On the basis of Moretti’s argument, it is the owners of those firms that benefit from the public sector²¹ (in the form of public subsidies to education)²² rather than the other way round. In the next case, too, one has to do with private benefits from the effects of work of educated employees, only that this time round the benefits are manifested in the form of wages of other workers rather than profits of their employers.

In another paper, (Moretti 2004) he estimates what he misleadingly²³ terms productivity spillovers from college education by comparing wages for otherwise similar individuals who work in cities with different shares of college graduates in the labour force. [...] he finds that a percentage point increase in the supply of college graduates raises high school drop-outs’ wages by 1.9 percent, high school graduates’ wages by 1.6 percent, and college graduates’ wages by 0.4 percent. The effect is larger for less educated groups, as predicted by a conventional demand and supply model. But even for college graduates, an increase in the supply of college graduates increases wages, as predicted by a model that includes conventional demand and supply factors as well as spillovers.

The thing is that in the above case, just as in the former one, the result of the study involved can be couched in terms of gains from education, and possibly industrial co-operation, without any reference to human capital that appears in the exposition not on the substantive, but arbitrary basis.

Besides, such estimates of earnings gains from other firm’s educated workforce are contingent on some problematic assumptions. Rauch (1993) employs US Census data on wages and human capital of individuals in 237 cities in 1980 to estimate externalities in cities using individual wage-regressions. His results suggest that the external effect of a one-year increase in average schooling in cities on wages of workers in the same city is statistically significant and around 4 percent. However, “Rauch’s approach allows for identification of human capital externalities under the assumption that workers with different human capital are perfect substitutes in production. Perfect substitutability simplifies identification in his framework because it implies that the supply of human capital does not affect wages of workers with given human capital if total factor productivity is held constant. Hence, all effects of the supply of human

²¹ “In US, 55% of the education expenditures is provided by government, enrolling 89% of all school children” (In US, 55% of the education expenditures is provided by government, enrolling 89% of all school children” (Voyvoda, Yeldan 2005). data from the OECD suggest that government is typically the provider of the majority of public education and training services (OECD 2000).

²² And, incidentally, human capital scholars are aware that private benefits may be the result of other people’s activities, as shown, e.g., by the following statement: “adult height that is molded during uterine development and early childhood is modified by household and community resource allocations, [...] is appropriately viewed as an endogenous human capital variable in the adult wage function over a lifecycle, even if most of the human capital investments reflected in adult height are undertaken by parents and not the adult worker” (Schultz 2003).

²³ Because, as suggested above, the relationship between individual productivity and earnings is anything but simple, depends on the type of labour power concerned, and a host of other factors.

capital on wages of workers with given human capital must work through total factor productivity and can therefore be interpreted as externalities.

Assuming perfect substitutability between workers with different human capital may however erroneously produce the empirical finding of human capital externalities if different workers are in fact imperfect substitutes (Ciccone, Peri, and Almond 1999; Acemoglu and Angrist 2000). Similarly, Moretti's (1998) theoretical framework allows, to be sure, for imperfect substitutability. However, estimation of the structural equation used to obtain average schooling externalities (in his Table 9) implicitly imposes perfect substitutability. [... The above-mentioned mistaken results are likely] because an increase in the supply of human capital will in this case increase wages of some workers even if there are no externalities" (Ciccon, Peri 2000). Even irrespective of this shortcoming, research in the field under investigation by no means produces uniform results. Acemoglu and Angrist (2000), for instance, do not find evidence for average schooling externalities at the US state-level; their empirical approach uses instruments for average schooling of states as well as individual schooling.

To be sure, there are other studies that attempt to capture education effects on aggregate labour productivity which is for sure closer to the content of "social return" than previously considered indicators. However, whilst "uman capital plays a key role in modern growth theory (Lucas (1988), Rebelo (1991), Mankiw, Romer, and Weil (1992), empirically the effect of human capital on aggregate labour productivity remains controversial. While some cross-country studies find that the effect is positive and substantial, others report small positive or even negative effects" (Ciccon, Peri 2000).

For example, a study of 28 countries and regions found that "The evidence is unambiguous; young adult years of schooling is negatively related to the growth rate of TFP. The model of this paper [...] postulates that TFP growth is positively related to human capital accumulation, so this result contradicts this prediction" (Tamura 2004).

II. 9. 2. HUMAN CAPITAL AND ECONOMIC GROWTH

What should reflect social benefits of education and other components of what is termed human capital in a more unequivocal way is economic growth, as GDP level per capita is generally deemed to be an indicator of well-being. Naturally, this common wisdom is by noe means self-evident, it disregards, for instance, the socio-economic distrubution of fruits of economic development, and the widely held notion of trickle down is far from truth. It is commonly held that high and sustained economic growth increases the labour demand and wages which in return will reduce poverty.

Similarly, better earnings as a result of reduction in poverty lead to increase productivity and growth. But the extent of poverty reduction as a result of economic growth depends on how the distribution of income changes with economic growth and on initial Inequalities in income, as well in wealth, which is often missed out in such deliberations, this being not without its class significance, due to the role of inherited wealth amongst the privileged propertied classes). Anyway, if income inequality increases, then economic growth does not lead to a significant poverty reduction. Many developing countries have achieved high growth rates in different periods; however, poverty has not reduced significantly in these periods because of increased income inequalities.

"Most South and East Asian economies grew at higher per capita rates since early 1970 along with rise in income inequality over time. In contrast, Latin American countries grew by

less than the half of average growth rates in South and East Asia while maintaining high income inequality” (Tabassum, Magiid 2008).

Nevertheless, for the sake of the present discussion, let us tentatively assume that economic growth enhances society’s welfare. Even so, the socially beneficial role of human capital is not unanimously supported by evidence.

Furthermore, the aforementioned mainstream approach to the purported economic function and power of human capital are anti-sociological, or anti-dialectical, if you will—since leaving out the social context of the data under study amounts to an unnatural (in the sense of violating the nature of the social world) disassociation of what in point of fact is inextricably linked to one another. Pointing to the concept of labour power as actually hiding behind the current managerial catchword and buzzword at the same time one does not claim whereby that—a note of necessary caution!—that to get the theory of HC straight one should simply replace the term she deems inferior by that which is supposedly superior as far as its theoretical capability is concerned.

This is the case, among others, because of the HC concept is closely associated to methodological individualism, which is another way of saying that for the purposes of the theoretical framework of the present author's theoretical framework named socio-economic structuralism (whose epistemological leg is called 'dialectical realism') or, the approach under discussion is inadequate by far. If the above is not so clear as its author imagines it is, here is a telling example for the reader, all the more compelling that I've borrowed it in part from another work so that the reader could not complain that she has been left alone in the hall of mirrors, a treacherous one at that because instead of her pretty face and all the rest, nothing can be seen beyond what mirrors the panoply of ideas accumulated and/or created in the head of the present author. Let us thus take a short break, though the author needs to forewarn the reader that the theoretical argument at the heart of the data cited below is his and not the creators of the latter' product so that the whole passage might be regarded as kind of Machiavellian stratagem (from this point of view).

Before the curiosity of the reader takes precedence, it is useful to recall that the concept of labour power in our rendering lacks those flaws that the authors cited below, for better or worse, ascribe to the notion of HC. On the contrary, the theory of labour, as developed by its author in the person of the creator of the book currently read by at least some portion of the potential readership, recognises, inter alia, several types of labour power. One of those axes differentiates manual, intellectual and interactive LP, to put it in a nutshell. Now, the point is that the theory concerned may well serve as a predictor of so-called labour mobility [should be labour power], as it, with a high degree of precision, can tell us where to, that is to say, an employee made redundant or willfully leaving a given employer will transfer her/his labour power. In the societal division of labour there are distinct clusters encompassing what is first and foremost one of the aforementioned types of LP.

Assuming geographical/demographical conditions are appropriate (notably that in the centre where the new workplace could be found, also our worker will be able to find something in the way of accommodation, which will not ruin her/his financially), it is reasonable to predict—unless, for instance and of course, our lady will go for using her body for rather specific varieties of services, and our gentleman, upon meeting in a local pub, his old mate, did not decide that the life of a bandit, gangster, or even a shoplifter is much easier and its payoff is also far higher than in the case of everyday toil by the machine or some other 'Satan mill' [William Blake].

That said, one can see that what the authors of the work under consideration have been able to establish is consistent rather than somehow falsifying our own theory.

Thus, the two researchers set out to challenge-what is entirely in harmony with our own views espoused in this and other books and publications- the notion of “human capital” as “education, training and work experience” and suggest that it is the “quality of the workforce” that matters, here defined as the set of characteristics that allow workers to function in a specific institutional and historical context. Our main conclusion is that the quality of the workforce is affected by the institutional environment where the workers live and that therefore it can vary across countries and institutional contexts.

The above contextualism is, of course, just one side of what herein is understood as a dialectical approach worthy of its name. Anyway, it can be seen that the two Italian researchers in no measure go beyond the framework of our socio-economic structuralism. The same applies, sure enough, to an attempt at an empirical verification of their hypothesis; "second, we want to show the empirical relevance of this last point by testing the extent to which the quality of institutions (here proxied by the governance indicators of Kaufmann et al. (2007)) can affect the quality of the workforce (proxied by the percentage of the working age population registered in a lifelong learning program).

Our empirical analysis is conducted on a data-set of 11 European countries observed over the period 1996–2006. The results indicate that countries with better governance indicators are also endowed with a more qualified workforce" (Bottone, Sena 2011). It would be rather easy to demonstrate how narrow-minded is in point of fact Bottone and his colleague's approach to labour power; moreover, they do not seem aware of, nor see the need to distinguish between what could be called individual and collective rendering of the concept labour power, labour force, workforce and a plethora of others which are more often than not being confused with one another. But let us gracefully pretend that the scholars' argument does not contain any flaws for our present purposes [which it obviously does not]; let us take as an example what is the hottest of all hot topics on the Euro-agenda, that is to say, the so-called Brexit, and its implication in the guise of Ms. May's snap election, but you see, the quality of the so-called ruling elites¹ needs to be considered in far more detail than it is the case with the aforementioned scholars. Irrespective of one's political and ideological views, any objective comparison of, say, the Party Manifestos by Jeremy Corbyn and -at the time of writing-still the Prime Minister of still the United Kingdom will inevitably arrive at a definite conclusion regarding their respective class/estate contents.

That is to say, it is manifestly clear whose, i.e. which social classes and estates' interests and needs (as distinct from more fleeting wants, which are also to a far greater extent influenced by the marketing, advertisement and public relations processes) are reflected in those political documents. This fundamental distinction has been obscured, to a degree, by the Brits' over-interest in the so-called Brexit at the expense of more basic structural phenomena, as their health service, social security, working conditions of the mega-employee class (which question on its part has been pushed to the margin by the infamous, politically motivated by, inter alia, near fascistss the issue of immigration as purportedly the key threat to the economic growth, the welfare state, political democracy, and what have you). How confused and confusing was this anti-immigration, nationalistic bias has been revealed just after the infamous election and even prior to the start of any formal negotiations with the European Union. Namely, anticipating the unfavourable effects of the withdrawal of Great (?-this title becomes more problematic day by day), which expectations have been so far vindicated as far as one can get: inflation up,

pound sterling down, and, of course, real earnings also down, which causes each Polish, Lithuanian and so on to think twice or even more before her decision too go to Britain to seek work, since this simply does not pay off, notably when all the transaction costs are included (transportation to and inside the Isles, astronomically expensive accommodation, i.e. we are speaking about a rented room, for all intents and purposes, since even quite well-to-do Englishmen cannot afford to buy their own home or apartment in London and most of the well-known cities in the country. And the problem with the countryside, no matter how colourful it might be, is that any jobs are here a scarce commodity.)

So, for instance, the number of 'sisters of mercy' upon whom the entire British National Health Service hinges, or perhaps has hinged thus far, has fallen dramatically, which multiplied the problems the NHS is plagued with. Corbyn has very sensible solutions to this and other problems of the nation. And the results of the recent voting reflect this. At the time of writing the game is not over, by any means. As it happens, her majesty herself was forced too move to my knowledge, for the first time in history-her throne speech, which is of course written from the beginning to the very end by the Whitehall civil servants and reflects the programme, ideology or whatever pertinent to the new government.

The thing is, this time around nobody can tell what government would be at stake. And what Maya the Bee fears the most, as do their party colleagues, is the new election because her own own position in her own party and by extension, the position of the entire Conservative Party is at present very weak. And this can mean only one thing: that the advantage gained with such a difficulty in the Parliament of the UK by the Tories may evaporate altogether and still worse, they could be toppled by supported by his powerful grassroots popular movement, Jermemy Corbyn who has managed so far transform his leftish anew Labour Party into the largest party in Europe; whether worldwide, I am hesitant to state because of many divergencies in the way party memberships are counted throughout the world. Thus, the message to the reader, at least at this fascinating moment is: Watch this space! It may well be that tomorrow you will wake up in quite another Europe.

After all, the politician whose home programme is from the standpoint of the present author, disastrous and leads him to a certain class and estate struggle which he cannot win, given the fighting capacities of France's employee classes and social estates, including students, thus, the newly elected president or monarch of the motherland of Proust and Rimbaud, to name but a few, has, for a change, very sensible intentions as far as his foreign policies are concerned.

The reader will acknowledge that some of the ideas espoused in many of the author's other publications appear to be implemented by Monsieur Makron, despite his bourgeois profile as regards which there can be no doubt whatsoever. And yet, the same politician finally started what looks like an official legal process of the European Commission against the Polish government by virtue of its nationalistic, not to say, nationalist bordering fascist policy of disallowing the obligatory quota of immigrants and refugees into this country (I mean Poland, since this is the name of nationality and citizenry that features in the current author's identity card, of course).

II. 10. HUMAN CAPITAL AND HEALTH

While it is the factor of education that is usually treated as a main, if not the main, form of human capital the above remarks referring too, inter alia, the health sector remind what is referred to by the latter term is in most definitions of human capital being framed as its another

aspect, evidence on which is-as can be seen from what follows-mixed. Bloom et al.(2001: 1-26) attempted to estimate the impact of health on labour productivity, and concluded that health has a positive and statistically significant effect on economic growth. Meanwhile, Cullis and West (1979: 84-89) assert that health expenditure should not be considered as a form of investment in developed economies. Easterly and Rebelo (1993: 417-58) find that the coefficient of health investment for income per capita growth is negative but not significant.

Such inconsistencies pertain not only to the above form of human capital. Hanushek and Wosseman (2008) identify the channels through which human capital contributes to economic growth.

Firstly, human capital increases physical capital and labour productivity. Secondly, human capital accumulation increases the capacity of innovation (Lucas, 1988; Romer, 1990; and Aghion and Howitt, 1998). Thirdly, higher levels of human capital facilitate the diffusion and adoption of new technologies (Nelson and Phelps, 1966; Benhabib and Spiegel, 1994; and Barro, 2001). Forthly, there is a virtuous circle - upon reaching certain level, the acquisition of human capital is facilitated (Azariadis and Drazen, 199). To put it differently, “education contributes to economic growth for the country as a whole in the following ways (Miller 1967, Schultz 1963). First, education not only imparts knowledge, but also changes people’s perceptions and expectations of themselves and the society around them. Education may alter the attitude to work, consumption preferences, saving propensities, economic rationality, adaptability, innovativeness, flexibility, attitude towards family size, and various social attitudes relevant from the economic point of view such as migration within countries and internationally, towards more productive sectors of the economy resulting in rise in GDP and per capita income.

Second, education, through investment in human beings, imparts the knowledge to develop abundant complementary resources that may be substitutes for comparatively scarce resources and thus promotes efficient use of existing resources. Moreover, education is an alternative to consumption and not saving. Additional expenditure on education can make a net contribution to economic growth, even if the rate of return would be lower, because the investment made in education would otherwise be consumed. Further, education contributes to economic growth most essentially through research and also by discovering, cultivating, and nourishing potential talent. Lastly, as educational levels increase for women in developing nations, the opportunity cost to stay home and raise families rises. It increases labour force participation and reduces fertility rates for these women” (Viswanath et al. 2009).

However, it does not quite work out as that. Let us even leave aside the over-optimistic proclamations such as that by “Lucas (1988: 19). As lags are inserted in the human capital formation equation, it implies that human capital formation depends on earlier increases in the schooling of parents. He stressed that this process is not subject to diminishing returns since it is a social process. He argued that this, and education externalities, make per capita growth possible without bounds. Focusing exclusively on non-material factors of growth puts outside the picture its material, including natural conditions imposing the inevitable limits to growth, all the more that the prevailing model of growth is harmful to the natural environment, and consequently to human life on the planet. Even so, there is an important case to be made for not being so starry-eyed about human capital theory. “According to Pritchett (2001), since 1960 primary enrollments in developing countries increased from 66 to 100% and secondary enrollments rose from 14 to 40%. However, there is little evidence to suggest that efforts to increase either physical or human capital levels in developing countries, especially in Africa, have been successful in generating growth [...] Easterly (2001) details how sub-Saharan African countries

had larger increases in schooling than any other region since 1960. Yet these countries remained mired in poverty. Asian “tigers” like South Korea and Taiwan had smaller increases in education levels but flourished economically. In cross-country growth regressions, Pritchett (2001) finds no relationship between increases in education and increases in output per worker. Similarly, Gwartney, and Lawson (2004) find that the growth of human capital per worker is not related to per capita gross domestic product growth.

The lack of association between growth in schooling and growth in gross domestic product has been noted in several studies. The growth process of a nation. The national level of human capital, however, has negative and insignificant effects on this process (Ulusoy, 2001).

Africa’s stagnation in the face of its education explosion provoked economist Lant Pritchett to ask, “Where has all the education gone?” Pritchett’s analyses found no positive association between an expanding education sector and growth in output per worker or in productivity. (He actually found a negative and significant relationship in some statistical exercises.)

African countries with rapid growth in human capital, or the skills and knowledge possessed by labourers, during the 1960 to 1987 period, such as Angola, Mozambique, Ghana, Zambia, Madagascar, Sudan, and Senegal, were nevertheless disasters with regard to economic growth. Meanwhile, countries like Japan became economic miracles despite only modest growth in human capital. Other East Asian miracles like Singapore, Korea, and China did have rapid growth in human capital, but no greater than that of the African growth disasters. For example, Zambia had slightly faster expansion in human capital than Korea, but Zambia’s growth rate was 7 percentage points lower.

Indeed, at the same time that education has experienced a massive expansion in poor countries, the median growth rate of those countries has fallen, Productivity growth was 3 percent in the 1960s, 2.5 percent in the 1970s, -0.5 percent in the 1980s, and 0 percent in the 1990s. A similar study of how growth responds to the percentage change in the labour force’s average years of schooling found no relationship between growth in years of schooling and growth in GDP per capita.

Another group of economists found that variations in growth across nations have very little to do with variations in the growth of human capital. If a given country’s per-capita growth rate is 1 percentage point faster than average, economists attribute only 0.06 percentage points of this to the fact that human capital has grown faster than average. By comparison, economists found that productivity growth accounts for .91 percentage points of each 1.0 percentage point increase in the speed of output growth. (Easterly 2002). To be sure, there are some studies whose results are more favourable to human capital theory.

Alan Krueger and Mikael Lindahl found that changes in years of schooling had a positive effect on economic growth. They argued that Pritchett’s earlier findings of a nonrelationship between education and growth were due to measurement error (although Pritchett addressed measurement error). However, Krueger and Lindahl used the absolute change in years of schooling rather than the percentage growth in human capital as their unit of measurement. This has the effect of treating an increase of one year of schooling in a highly educated country as the equal of an additional year in a poorly educated country. This is counterintuitive, since an additional year of schooling in a poorly educated country implies a much faster rate of growth of human capital. Growth of output should respond to the growth of human capital. Even with this methodology and controlling for measurement error and other variables, Krueger and Lindahl found that the effect of the change in schooling on growth did not always pass standard tests for a significant statistical relationship.

Yet another study pointed out a more subtle problem with the idea that growth in human capital is a major force behind economic growth. If human capital growth is driving GDP growth, then rapidly growing economies will have rapidly growing human capital. This means that young workers will have considerably more human capital than the old fuddy-duddies who were educated during a time of much lower human capital. This factor would tend to give the young workers higher wages than the old workers, But wages worldwide almost always increase with years of experience-the older workers always earn significantly more than the young, even in rapidly growing economies, Even if years of experience count for something, fast-growing countries should have less of a wage increase with experience, because of the human capital advantage of the young. But this hasn't been found anywhere. Therefore, the growth of human capital cannot be that rapid in a fast-growing economy and so cannot account for its rapid growth. (Easterly 2002).

Human capital theory misses the point in the above-mentioned regard, because it posits an overly straightforward relationship between education and formal qualifications and earnings. Whilst some employees have indeed formal labour power whose remuneration depends on its formal characteristics, such as credentials, others possess real labour power where actual skills, whose relationship with the amount of schooling need not be straightforward, are the principal determinant of compensation. This may take the form of an achievement-based labour power, as distinct from ascriptive labour power, and, again, real effects of work are by no means dependent solely on one's skills, but also on the host of other factors, such as the efficiency of the co-operation chain in which one is located, quality of organisation of work, and so on. Interestingly, the drawbacks of an individualistic model were recognised by none other than one of the early advocates of human capital approach: "The greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgement with which it is any where directed, or applied, seem to have been the effects of the division of labour"(Smith 1976). And modern proponents of human capital realise the importance of co-operation as well. The following economists, for instance, in effect reject the possibility of accounting for what is termed human capital in the individualistic frame of reference pertinent to the mainstream human capital theory: "the replacement cost of employees could be many times their salary and benefits, depending on the skill level and extent of inter-organisational co-operation required to perform a job" (Bukowitz et al. 2004).

Finally, quality -of-education considerations go some way towards accounting for the failed relationship between education expansion and economic growth. But this is not the whole story-"ven high-quality schooling will go to waste if skilled labour and enterprise are not rewarded in the economy or are combined with inferior technology. A sign of this is the frequent mismatches between labour productivity and the test scores [...] The most obvious example is the United States itself, which has the highest labour productivity in the world, Meanwhile, at certain points its test scores lag behind those of low labour-productivity countries such as Hungary, the Slovak Republic, and Thailand, The story of an education crisis in the world-beating U.S. economy just doesn't make sense.

Either the quality of education in the United States is being mismeasured, or education quality is not as important for labour productivity as Hanushek makes it out to be" (Easterly 2002). (Trostel 2000).

Additional problems are caused by (not unrelated to its "leaping" character pointed out elsewhere) heterogeneity of human capital and, accordingly, different ways of acquiring it. "hu-

man capital is a very broad concept and includes many different components: education, training, learning by doing, health and so on. While heterogeneity is apparent in the real world, growth theories have neglected it and have usually simply identified human capital with education.

This means that while these theories stress the importance of human capital, they do not properly account for the presence of more than one mechanism for accumulating it. This has important policy implications: most growth models' policy prescriptions refer only to education, and this is a rather biased view of policy measures affecting human capital" (Zotteri 2002).

In the case of learning by doing as a way of accumulating human capital, the accumulation is not the outcome of an investment decision but a by-product of other activities. "Many features make schooling a different way of investing in human capital than training. Among them are the ones related to: the agent who actually makes the decision, the effect of the investment on the human capital of the following generation, the depreciation rate of human capital and the effects on growth. On the first of these points, either the individuals themselves or their parents are likely to decide about schooling. Their choice depends on their preferences and on the resources that can be devoted to the investment. The decision-making mechanism for training can be very different, because it may be the case that the firm and not the individual decides about the investment.

[...] Turning to the effect on the next generation's human capital, in many growth models the human capital stock of each generation depends on that of the previous one. The question is whether this relationship is likely only for education investments or also for training ones (or vice versa). The answer could be negative if knowledge from on-the-job training is specific (as opposed to that from schooling) and therefore unlikely to be inherited. Thirdly, as far as the depreciation rate is concerned, if human capital depreciates differently according to the way it is accumulated, it may be likely to depreciate faster when it comes from on-the-job training, owing to its "specificity". Oi (1962) first made the distinction between specific and general training. Finally, schooling and training can have different growth-enhancing effects. Suppose growth depends on innovation/diffusion activities. ⁸ As education provides more flexible skills, highly educated workers could be more productive in innovating activities, while highly trained ones could be more productive in exploiting the existing technology. If this is the case, the skill composition of the labour force is important for growth, as education and training skills are not perfect substitutes" (Zotteri 2002).

In addition, human capital distribution across activities is important; countries with a considerable number of engineers in proportion to overall workers can be expected to grow faster and have a higher return on human capital than countries with, say, a higher proportion of lawyers (Murphy, Shleifer and Vishny, 1991).

Along that same lines, Easterly (2001) finds that the return on education is lower in countries that have deficient legal systems and/or weak markets.

Even irrespective of the above-mentioned issues, the human-capital theory of growth leads to critical observations, analogous to ones presented earlier in this part of the book.

The early neoclassical theory of economic growth had placed much emphasis on exogenous demographic factors that affect the growth rate of nations. Factors such as the growth rate of population, the structure of the labour force, and the rate of technological change were assumed to determine the long-run equilibrium growth rate. Indeed, in neoclassical theory, capital accumulation increases an economy's growth in the medium term, but the steady state growth is constrained by the rate of growth of the labour force. Moreover, technical progress, which is

assumed to be exogenous, is the main driving force of the model. However, a large part of the measured growth in output was left unexplained in the neoclassical model, the so-called Solow's residual (see Snowdon and Vane (1997) and Romer [1996]. The traditional Solow (1956) theory of economic growth does not explicitly measure the role of human capital. He found that the increased use of capital explained 12.5 percent of the change in gross output per man-hour while the concept of technical change explained the 'residual' 87.5 percent. Later it was realised that much of this residual might be due to human capital.

Hence researchers developed augmented Solow models, which contain human capital as a regressor in explaining GDP growth.

In the mid 1980s the endogenous growth theory, motivated by the work of Paul Romer and Robert Lucas, has identified a number of factors that determine the growth rate of an economy. Hence, factors such as increasing returns to scale, innovation, openness to trade, international research and development (R&D), and human capital formation are considered key factors in explaining the growth process (see Lucas [1988] and Turnovsky [1999] for a review" (AGIOMIRGIANAKIS et al. 2002). Briefly, "the changes in the utilisation of traditional inputs (land, capital and labour) cannot entirely explain the growth performance observed in many countries. This could indicate that the quality of labour (human capital) plays an important role in determining growth. (Zotteri 2002).

The primary purpose of citing in particular the second quotation was not to engage ourselves in the debate over the neoclassical growth function's composition. Rather, parallel to comments in earlier contexts, we wanted to call attention to the fact that the term of human capital is in the context of the argument cited utterly needless as the intent of the author is perfectly well rendered by the concept "quality of labour" to which the "human capital" does not add anything new or useful. The same applies to Zotteri's comments mentioned above. The concept of depreciation, for instance, by no means is an exclusive attribute of capital, it may refer also to labour power and its value, meaning then a partial loss of ownership of it.

Similarly, the following claim refers to an attribute of labour power, and not to any capital, human, or otherwise: "spillover benefits from human capital that Lucas (1988) stresses. As an example, the return to kind of ability, such as talent in communications is higher if other people are more able. In this setting, increase in the quantity of human capital per person leads to higher rate of investment in human capital, and hence to higher per capita growth" (Abbas 2000). Some formulations reveal the hidden identity of the concept of human capital even more explicitly. The following account is very true, only that it does not fit at all in the framework of human capital theory, since even the terms used such as labour capacity, or work capacity expressis verbis refer to nothing other than labour power: "the health factor can be incorporated into growth models easily when the models are viewed within the context of human capital and allow for the enhanced productivity generated by labour capacity. Improvements in health increase a labour force's productivity, reducing incapacity and debility and raising work capacity over the life cycle. The most obvious gains are fewer days off work due to illness, increased productivity, greater opportunities to obtain better-paying jobs, and longer working lives" (Rivera, CURRAIS 2003).

II. 11. CONCLUSION

Since the last thing the author of these words would like to cause is to render the reading of his book a backbreaking experience to the reader, its conclusion will be as brief as possible.

The truth of the matter is that in most cases, the so-called Conclusion or Conclusions contribute little to what the author has had to say in the body of her/his work, be it an article, a book, or whatever. It is simply one of not of the most sensible requirements of academic bureaucracy. It is unreasonable because it is formalistic; one piece may require quite an extensive summary, another necessitates a clarification of some of the points made earlier, but in some, not so rare cases, this part of the text is, frankly, redundant. Therefore, the author promises he shall not abuse and misuse the reader's patience and accordingly, he does not engage at this point in anything like summary of the principal points made throughout the study. That the author himself and, much more importantly, his work and notably quite a few arguments put forward in the course of all the various analyses conducted in the book is critical towards the notion and theory of human capital should be emphatically clear to any, even not a very attentive reader.

At best, it might be conceded that the utility of the concept under consideration, but only in comparison to the crude notion of labour as an undifferentiated factor of production, is its focus on qualitative aspects of labour force, as distinct from purely quantitative account, as manifested, e.g., in the following claim: "we combine a human capital measure and employment to create effective labour input. Because we know that human capital embodied labour performs better than traditional employment in estimating potential output growth" (Abbas 2000).

The "leaping" quality of the notion under consideration is matched by its over-extended uses; human capital theorists apply their favourite concept to such diverse areas as crime, health and citizenship. To cut a long story short, those attempts provide just another illustration of the fact that in the social sciences no magical bullet, or panacea has been found so far.

ABOUT THE AUTHOR

Jacek Tittenbrun is Professorus Ordinarius at Adam Mickiewicz University, Poznan, Poland, Institute of Sociology, AMU; it is relevant to say that aforementioned IS AMU is one of older institutions of that type in Europe as a whole, and there can be no denying that it is the oldest one in this region of Central-East Europe, as it was founded by Florian Znaniecki, Polish/American Sociologist, who was, inter alia, the president of American Sociological Association. Now, as it happens, the supervisor of the present author's M.A. and Ph.D was a student of prof. Tadeusz Szczurkiewicz, who on his part was a direct disciple to Florian Znaniecki. Thus, in terms of the sociology of science, it is arguable that the author of the current book could be viewed as a link in a quite lengthy and dignified academic or intellectual lineage, not to be identified, at the same time, with that featuring in the title of the famous Tamla Motown's hit, made famous thanks to its performance by the Queen of Soul, Aretha Franklin. More specifically, Jacek Tittenbrun has published so far three dozen books or so, more a third of those in English-including in such renowned academic presses as ashgate in the UK, Transation Publishing (New Brunswick University, new Jersey) , and Vernon press in the U.S. He is also the author of well over 300 theoretical papers and chapters to collective volumes, at least half of which has been published in English (including a few in German). His books were translated into Spanish-kind of measure of popularity, weight or whatever of the book concerned, devoted to "The Collapse of 'Real Socialism' in Poland" was that an Argentine publisher had chosen to publish the book illegally, i.e. without covering transations costs, license, etc. It needs no reiterating-at least to all who are at least skin-deep familiar with Jacek Tittenbrun, that this was it; that is to say, no legal actions against those 'intellectual pirates', who did violate, after all, my sain copyright, which I would be eager to turn into copy left, having any powers to that end, or even any awareness whatsoever that such and editorial undertaking had been in preparation. The for mentioned book had also its second edition in the UK, but-interestingly enough-this time around by another publisher. This may mean that the book has come to be viewed as something of a best seller. Its reviews to which I've had access were by and large positive, at times enthusiastic, albiet upon reading a given review one would be most often than not to determine the theoretical, political, and ideological position of the author. The

ideas advanced in that book on the one hand shocked the traditional Western left who were used to what they came to be regarded as their intellectual and theoretical monopoly- any works written the stigma of Iron Curtain were by default doomed to at the very best provide some empirical material or the data-treated, after all, with a good deal of mistrust by the genre of those who self-styled themselves as the "New Left" most often. Now, surprise, surprise!, they got a theoretically mature and empirically grounded study, and, which is quite relevant, both that theoretical framework as applied to the so-called Soviet camp, the Warsaw Pact countries, or whatever constituted kind of revelation to at least part, if not majority of them. Had those pages been written by an anti-communist, anti-sovietologue, or whatever, their surprise would be mitigated. But in the form of the book of a young social scientist based in a country deeply hidden behind the Iron Curtain this all was hardly imaginable and tough to swallow. All the more that the author had a good deal of empirical support to bolster his bold theoretical and political claims. I did not engage in constructing any register or anything of that sort to my book and the ideas it contained. Owing to all still can be found inside my brains regarding the matter is a string of instantaneous which shots of film cells, if you like. I do recall, for instance, that for several years, how many, I would not and cannot say, there were in the worldwide web many a page devoted exclusively to my rendering of the demise of the previous regime, treating this author's views as kind of a left-wing textbook, orthodoxy, or even axiom.

As an anecdotal matter, the uninitiated reader ought to know that not only the undersigned did not garner on this count anything like financial or any other income or benefits, prestigious excluded, but, on the contrary, had become causes of quite serious discomfort and trouble. The other day, someone asked me whether I know what about me has been written on the popular Internet forum wherein readers of the most popular daily in that country 'The Electoral Gazette' present their remarks and observations on anything from Poland's minister of foreign affairs to a professor at a local university. And herein lies the rub. It would not be difficult too disentangle the source of the remarks under consideration whose character has made me laugh rather than caused any other reaction, though - despite me personally did not maintaining those times in memory- I was perfectly aware that not so long ago this kind of criticisms would cause a very rapid geo/social movement or mobility of the culprit, to wit, his ending up where (his Russian is still-alongside other languages- still sufficiently good to be in a position to discuss, for instance, with Sakharov, some definite ideas in modern physics, or express his admiration for the poems of Mandelstam and Matveyeva- in my humble opinion, much underrated artist, at least in most other than their native country.

Another Tittenbrun's book that has become the subject of at least as hot a controversy was his monumental, four-volume study of Poland's privatisation and capitalist transformation. Titled " Z deszczu pod rynnę", i.e. " From the Frying Pan to the Fire", the title expressed in a nutshell the author's view on the key consequences the collapse of the so-called "real socialism" and its replacement by the purportedly supreme in economic and political terms system did bring in to the negatively privileged-to borrow Max Weber's phrase- social classes and estates in Poland. The book was to be published, albeit perhaps in a slightly abbreviated version, by the U.S. Columbia University Press; unfortunately, the author's serious road accident and resulting long hospitalisation put an end to that initiative. However, in theoretical terms, the most significant achievement has consisted in working out an innovative analytic framework termed socio-economic structuralism, whose presence will be also evident in what follows.

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ⁱ The present author in fact rejects this term, or at best would treat it as a heuristic one, to be replaced by another, more exact concept. The latter, more firmly theoretically grounded construct is—according to socio-economic

structuralism, as the current author's analytic framework is termed-the notion of social, in this instance political estate. Unfortunately, there is no space here to discuss what is a fully blown theory of the said units of societal differentiation in the extra-economic domain; suffice it to say that the patient reader will surely come across a diversity of applications to that term, drawn in part on Weber, but.... the common caveat holds, that is, all the errors and deficiencies to that framework are mine. Of course, it is up to you, dear reader, to compare the author's treatment with the Weberian one and thereby establish what is novel about the subject matter within the former framework and what the worth of those innovations, if any, is.