

A New Model of Labor-Value Theory: Dual Level Theory on Creation of Labor Value

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Abstract: How does labor value, which is defined as abstract labor under given social production conditions, transform with the evolution of social production conditions? This unsettled logic gap in Marx's *Capital* leads Marxian labor theory of value into academic dilemma. This paper aims to solve this problem by introducing a new model of labor-value theory. Social labor should be divided into two levels: "routine labor" under normal conditions of production, and "innovation labor" which creates these conditions of production. Routine labor produces labor value equal to the abstract labor time as Marx defined, i.e. the individual working time at the micro level under given social production conditions. People create labor value as social relations by producing goods for others. However, innovation labor doesn't produce goods directly; its products are nothing other than the evolution of social production conditions. It yields labor value by enhancing the human capacity of producing goods. The labor value created by such a capacity is equal to the total accumulated value over time during the transformation of social production conditions. The process of value creation by innovation labor is at a larger level of social history. The present theory of labor value falls in confusion of these two different levels of labors and their distinct value creation processes. These academic misunderstandings would, however, be absolutely settled by the theory stated in this essay.

Key Words: innovation labor, labor theory of value, materialized value form, humanized value form, science and technology

Marxian labor theory of value has been faced with various kinds of challenges ever since its emergence. The utmost challenge nowadays is that innovation labor (including the latest technological inventions, advanced management strategies, information technology, etc.) has created a huge amount of value without direct connections with working time. Some sparks of innovation instantly become productive. Their application and popularization facilitates the satisfaction of needs through non-market processes and it permits the reduction of labor time and the automation of repetitive, dangerous and unhealthy tasks. By this way science and technology bring about not only tremendous use value, but also abundant value manifested as social relations. Thus, several critical (post-)Marxist theorists are claiming that working time as measure of value of collectively produced goods and services is no longer valid and that Marxist value theory is therefore obsolete (Hermann 2009). Gorz (2004, P31-35) talked about the crisis of the measurement of value due to the recent changes in knowledge-intensive sectors such as information technology in one of his latest book. While prominent representatives of this views go

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to Antonio Negri and Michael Hardt, who assume that “in postmodern capitalism there is no longer a fixed scale that measures value” (2001, P356). Some scholars even try to challenge the essential standpoint of Marxian value theory by indicating that, “in the long term, rising labor productivity reduces the significance of living labor for the production of use values and, consequently, for the determination of value” (Saad-Filho, 2002, P109). More than debates among scholars, controversy on this issue concerns the future of social economic development and the fate of Marxian labor theory of value in our times in the world.

How does labor value, which is defined as abstract labor under given social production conditions, transform with the evolution of social production conditions? This unsettled logic gap in Marx’s *Capital* leads Marxian labor theory of value into academic dilemma. This paper aims to reinterpret some ambiguities in Marx’s works for new situations today, like the spring of given production conditions, in which way do science and technology create value and how to measure value of innovation labor. We will introduce dual level theory of labor value creation to analyze two different levels of labor and their distinct value creation processes. In the first section we discuss three sorts of economic study paradigms and most practical of which is Marxian labor theory of value derives from his historical materialism. In the following section we expand social labor into routine labor and innovation labor and tell two different level of time, time at microscopic level and macroscopic level, for their value creation processes. The third section probes into two forms of labor value, materialized value form and humanized value form, and discuss their measurement separately. In the forth section we analyze the value creation process of innovation labor and calculating mode of its labor value. The essay ends with some conclusions.

1. Labor Theory of Value: Economic Study Paradigm of Historical Materialism

Considering various modern economic theories, the academic paradigms on economic phenomena can be summarized into three sorts. One is the “interest study paradigm” from neoliberal economics, which starts from rational economic man hypothesis that believes that weighing profits and costs during market exchanges results in human behaviors, and finally results in an equilibrium price system for commodities. This is the most superficial paradigm with its main limitation of excluding the material production process and social interpersonal connections involved in market exchanges. It focuses on phenomena instead of essence, that’s why critics call it “vulgar economics”. The second one is the “flux study paradigm” from the neocambridge school coined by Mrs. Robinson. It attributes the price of “exchanging commodities with commodities” to the reproduction flows of “producing commodities with commodities”. Reproduction can be maintained persistently only when the total price of “commodities output” exceeds that of “commodities input”. And then they educe equations that express currency flux across all societies, which produce the price system of all social commodities. This academic idea is well known as “Sraffa’s Theory” (Sraffa, 1963), with a severe defect of overlooking the social interpersonal relationships and flows behind commodity exchanges and reproduction, as well as the continuous transformation of social relation structures and social industrial frameworks. Thus a “social process is replaced by technical coefficients and social relations by the distribution of the product between the social classes” (Yaffe, 1974, P31-49). Last but not least, Marx’s labor theory of value grasps social labor relations, the essence of capitalist relations of production and the specific features of this mode of production.

The famous economist Hailiang Gu claimed that Marx was an opponent of labor theory of value when he began studying economics. After he proposed historical materialism, however, his viewpoint towards labor theory of value changed radically. Ultimately, he not only inherited labor theory of value from classical economists, but also “endowed fresh content to Ricardo’s labor theory of value on both worldview and methodology, even overstepped him on many academic opinions” (Hailiang Gu, P21, 37). As the precondition for surpassing pioneers is criticizing the old conception of history, Marx (1845, P56-57) said, “the highest point reached by contemplative [anschauende] materialism, that is, materialism which does not comprehend sensuousness as practical activity, is the contemplation of single individuals and of civil society [bürgerlichen Gesellschaft]”. The old labor theory of value with foundation of abstract human nature is a kind of economic theory derives exactly from this old historical view. It regards economic behaviors like labor and exchange merely as individual choice of “benefit preference and loss aversion”. Although it achieves rules of civil society on phenomena level, like Adam Smith’s invisible hand, it fails to reveal the historical laws of human society on the level of hypostases. On the contrary, historical materialism proposed by Marx runs on practices. It does not take society as a collection of abstract individuals, but considers social history as a historical course for human interconnections and mutual creations via practices. Thus the basic practice, material production labor, is the primary key to tackle the mysteries of social history. “Since for the socialist man the entire so-called history of the world is nothing but the creation of man through human labor, nothing but the emergence of nature for man” (Marx, K., 1844). Marx drastically breaks down the old labor theory of value of abstract human nature and then establishes a grand theoretical paradigm to study social economic relationships and their laws of evolution under human labor’s creation and development. This new paradigm is Marxian labor theory of value.

Human labor is a natural institution above all relying on joint efforts of human and other natural entities to create use value. Natural science and technological science used to research in this field. Besides the labor of self-service, there still exists social labor that provides products and service for others’ needs, which is not only a natural course, but also a social course to produce interpersonal relations. Social labor changes natural status to yield use value, meanwhile producing social interpersonal relationships, which are the inner connections among human lives. As Marx (1844) addressed, “In the individual expression of my life I would have directly created your expression of your life, and therefore in my individual activity I would have directly *confirmed* and *realised* my true nature, my *human* nature, my *communal nature*”. For some social formations, like consanguineous society or clan society, social labor constantly forms ethical and obligational relationships among people. For stratified society, social labor generates the hierarchical relationships among people (Pinyue Lu, 2004). While for the market economy, social labor creates general social relations among people via market behaviors, which is also known as value that coagulates in commodities. This kind of relationship is named “value” because human labor constructs each other’s life through market exchanges, building inner connections among all lives. Thus only the living labor that serves others can produce the value as social relations (inner connections among lives), with natural institution as the carrier of social relationships and their generating process. This is the philosophical connotation of “only social living labor can create value”.

In short, the neoclassical economics studies the economic state of society from market

behaviors like “exchanging commodities with commodities”. The neocambridge school investigates the social economic procedures behind commodity exchanges, which is the process of “producing commodities from commodities”. And Marx boils all these economic phenomena down to their deep-seated links, the human labor relations established during “exchanging lives with lives” in the market economy. The social labor relations with a name of “value” are the groundwork for all other social connections. Marx (1857) explained that, “the very necessity of first transforming individual products or activities into exchange value, into money, so that they obtain and demonstrate their social power in this objective [sachlichen] form”. Under certain social and historical conditions, labor value concentrates and accumulates in monetary form, transforms into the social power of allocating social resources and dominating social labor. This power of social relations is known as “capital”. Capital chases proliferation of surplus value through competitions, and surplus value is divided by various social powers, which gives birth to the economic structure and historic movements of the capitalist market. Thus Marx’s argument starts from labor value to reveal the most essential laws of the market economy, i.e. the logic of capital step by step. Western economics describes and summarizes superficial rules of some economic phenomena, while Marxian economics works over deeper laws of social economics from basic interpersonal relationships. This is exactly where the imperishable academic charms of Marxian labor theory of value lie.

2. From Labor Value to “Dual-level Labor” and “Dual-level Time”

Labor value is the general social relations generate through social labor and accumulate in commodities, which expresses itself through commodity exchange value. Marx employs “abstract labor time” of social labor quantity to measure commodity value, which is the abstract “same human labor” time (socially necessary labor time) of the society from which the labor originates. “Socially necessary labor-time is the labor-time required to produce any use-value under the conditions of production normal for a given society and with the average degree of skill and intensity prevalent in that society” (Marx,K., 1961-1962[1867-94]: I, P39). Note that socially necessary labor time is not the nature time of concrete labor any more, but socialized time embedded with social factors. It is the abstract labor time consumed for producing commodities under the conditions of production normal for a given society.

We used to neglect the social aspect of abstract labor time or confuse it with nature time, and overlook the difference of abstract labor time (value quantity) under diversified social production conditions. Actually, in different societies or different developing stages of one society, the conditions of production normal for a given society are very different from each other, so their abstract labor is supposed to be different, which mean they create different levels of labor value within the same amount of time. For instance, in China, social normal production conditions before 1979 (reform and opening-up policy) are quite different from it today, thus the derived socially necessary labor time defined by them are totally dissimilar. Labor value completed in equal socially necessary labor time under two different social conditions cannot be considered as simply identical. If denying this kind of distinction, “the conditions of production normal for a given society” in the definition of labor value is completely useless, because the labor value of commodities would be taken as the time that humans work on a certain commodity under any production conditions, which fully breaches the elementary conception of Marxian labor theory of

value. Hereby we can see that, logically speaking, Marx's definition of labor value considers two levels of labor.

First, the labor that produces commodities under conditions of production normal for a given society, which is called routine labor, for it is prescriptive labor under given production conditions. The value it creates presented as social relations is the abstract labor time that accumulates in commodities. Routine labor is unnecessarily simple labor because it sometimes requires a lot of experience, skills and techniques. It includes physical labor as well as regular mental labor (like general administration, general design, etc). Just like Marx (1990) once pointed out, "We mean by labor-power or labor-capacity, the aggregate of those mental and physical capabilities existing in a physical form, the live personality, of human being, capacities which he set in motion whenever he produces a use-value of any kind".

Any conditions of production normal for a given society can never drop from heaven. They are also the outcome of human labor. This kind of labor does not aim at producing commodities with material or mental nature, but updating conditions of production normal for a given society, which means to improve existing production conditions and labor manners into new ones. We call this second kind of labor "innovation labor". It is on a higher level than routine labor because routine labor produces ordinary commodities while innovation labor doesn't produce commodities themselves, but new conditions and manners for commodity production.

The general forms of innovation labor are as follows:

First, labor for originality, or formulating scientific or cultural notions and technological innovations that will affect social production conditions. The most significant labor for originality is systematic innovation that is able to ameliorate production conditions of one industry even whole social producing system. e.g.: electronic computer, internet, laser typesetting system, etc.

Second, labor for betterment, or improving and developing the original ideas and technological innovations by enriching their feasibility so that it is possible to spread the fruits of original labor to all walks of society.

Third, labor for popularization and application, or expanding the fruits of labor from within the conditions of production to outside. All industries will be involved in industrial upgrade and old production conditions will finally be replaced. Although this kind of labor is not an original creation, it is very important because it plays a crucial part in changing social production conditions. Without it, any original labor will turn out to be castles in the air and social production conditions will fail to change on the whole. Moreover, there is the great effort of selecting, digesting and developing the old technology during the course of popularization and application.

The distinction between innovation labor and routine labor lies neither in complexity, complicated or simple, nor in manner, mental or physical, but in the different levels to which their products belong. Products of innovation labor are exactly the social production conditions for routine labor. What are their ways of creating value separately?

We know that social production conditions are keeping in changing, but it does not suffice to say that it changes every day or every moment. Actually, there exist comparatively quiet moments in some stages of the constant changes (the relative equilibrium of industrial structure). The social historical time is the time period taken for a given society to develop from one certain status to another status. Time cost on innovation labor with products of new social production conditions is the macroscopic social historical time instead of microscopic individual labor time. Some people

take innovation labor as the ideas that come out of one's mind all of a sudden, so they think that the labor of some certain moment generates huge amount of value. This opinion is not correct. These ideas cannot represent the entire innovation labor, but only one incident of the whole innovative process. Moreover, once these ideas fail to change social production conditions, they do not create any value. Thus we should not employ the "moment" to calculate the labor value it brings. Only after experiencing certain social historical time, the innovative ideas can be improved and promoted into application. They then begin changing social production conditions gradually and create value realistically.

During the long time period of the development of social production, people used to perform routine labor under given production conditions to yield both physical and mental products that serve others. The time consumed is abstract labor time, which accumulates and turns into commodity value. Note that abstract labor time here differs in two ways with social historical time, since they are different levels of time. First, social historical time is time on a macroscopic level, which refers to the time period for entire social production development, while abstract labor time is time on a microscopic level. It is the sum of each individual's abstract labor time, which can be taken as labor time for the general labor force. Second, social historical time for social development is unique and free of additivity. For instance, we can't simply put every social individual and enterprise's experience during 30 years' reform together to reach the total time of society, because the 30 years is went through by entire society. On the contrary, abstract labor time enjoys additivity. Abstract labor time (total value created) of social collectivity equals the sum of the abstract labor time (value created by individual) of all the social members.

As routine labor and innovation labor fall into different levels of labor, they have to create value (social relations) by taking different amounts of time. Routine labor produces value though abstract labor time consumed by individual under given social production conditions. Innovation labor increases social value by enhancing human capability of producing value during a long time period (social historical time). In order to clarify value creation function of innovation labor both academically and practically, we have to begin with the difference of value made by routine labor under different social normal production conditions, then we can see what innovation labor contributes during the process.

3. Materialized Form and Humanized Form of Labor Value

Notions put forward in Lu's last paper "Materialized and Humanized Forms of Labor Value: Paradox of Output Value and Its Solution" can do help here. In this paper, I note that labor value is the time consumed to produce commodities under the conditions of production normal for a given society. Along with different conditions of production normal for a given society, derived socially necessary labor time turns out to be diversified. Labor values generated in a particular period of time are thus distinct from each other. Use value quantity created by human labor over a certain period is so-called labor productivity, which indicates human practical ability and concrete labor capability over nature. The value quantity yields by human labor over time shows the human ability of creating social economic relations through market. It suggests the developing stage of human abstract labor capability. Development of abstract labor capability can be found when social labor is evolving into social economic relations.

As stated above, the radical significance of Marxian labor theory of value is attributing

modern social economic phenomena to most essential connections: the labor connections of “exchanging lives with lives” in the market economy. These connections are also called “labor value”, which are maintained through two types of production advanced by Engels, named “material production” and “human production”. “According to the materialistic conception, the determining factor in history is, in the final instance, the production and reproduction of the immediate essentials of life. This, again, is of a twofold character. On the one side, the production of the means of existence, of articles of food and clothing, dwellings, and of the tools necessary for that production; on the other side, the production of human beings themselves, the propagation of the species” (Engels, F., 1884). Marx (1857-1861) goes further, “But this is also true of every kind of consumption which in one way or another produces human beings in some particular aspect. In the former, the producer objectified himself, in the latter, the object he created personifies itself”. One labor value gains two manifestations, one after the other, i.e. materialized form and humanized form, via the two types of production. Socialized human lives are consumed by social living labor during material production. They coagulate into commodities and shape into “materialized value” which is measured by socially necessary labor time. Interpersonal social relationships also hereby generate. However, this is only the “deposited status” of labor value, not the final one. Before it turns into labor value of social relations, it has to go through human production to establish inner connections between lives of producers and consumers. When others take advantage of labor value to establish and maintain their lives, labor value finally reaches its humanized value form. The combination of these two types of production is the process for human to “produce lives with lives”. Completed lives transform into materialized value and produce new lives of greater value and higher quality. Thus, “the whole world history stems from no other than human labor by each other”(Marx, K., 1844). No wonder that labor theory of value becomes the academic paradigm when studying economics of historical materialism.

Since there are two explicit forms of labor value, there should be also two measures of value. Measured value for materialized forms is the abstract labor time under certain conditions of production normal for a given society. Every certain social normal production conditions define a certain abstract labor time. Abstract labor times of different societies and periods are never equal. Along with the changes of social production conditions, derivations of “unit abstract labor time” will endure alterations. Thus the value measure itself has to be modified. It is necessary to setup a common value measure that is applicable to each social normal production conditions when scaling its “unit abstract labor time” (value measure). Imagine that we use an international metric to compare and measure base units of all countries. We can transform the deposited form (materialized value form) into the final form (humanized value form) first, and then compare labor value created under different social normal production conditions by establishing humanized value that is understandable in all societies.

Is it possible for us to build a humanized value scale for all human societies? Marx’s theory on labor force reproduction throws a light. Actually, the formation of labor value is to set up inner connections of human lives by “producing human lives with human lives”. Reproduction of human force is its simplest part, because the basic form of life is “simple labor force”, or the human life with elementary physiological functions. We can take the maturational unit for simple labor force (like “person per hour”) as a unit of human life. It excludes the difference made by various social conditions as much as possible to retain indistinctive human natural functions. Thus

it is supposed to be applicable to every society or every stage of one society. People may say that there are also distinctions among the simple labor force in different societies or different historical development stages, since human natural functions are also keeping in evolving. At any rate, this tiny error can be ignored compared to the grand difference made by social development. Just like the length of a ruler, it also changes, which can be overlooked compared with a child's growing height.

During human production, the materialized value (socially necessary labor time T of given society) accumulates in commodities and transforms into humanized value V , which can be defined as the quantity of simple labor force that can be produced by these materialized value. The conversion rate here is the efficiency for lives consumed by producers to reproduce others' lives. The creation rate of human value is called "value creation rate", which is presented by h for human. Thus we get $V=hT$. Transformation from materialized value T to humanized value V is exactly the conversion from special materialized value scale for each society to a common humanized value scale for all societies. "Producing lives by lives" is carried through via labor of interpersonal service. Thus, h can be taken as the index for inner connections among human lives. As labor productivity is material capacity of labor, h is production efficiency of human lives during human production.

$V=hT$ directly illustrates the simplest human production. Simple labor force produces more simple labor force to expand the quantity of the simplest form of life. Further, it can be extended to human production on a much more complicated level, which aims at improving the quality of human life, since the quality of life can be converted to multiples of the simple labor force. For example, the social labor consumed in producing 1 hour's life of high quality can yield 3 hours' simple labor force; therefore, the ratio between the two lives' quality is 3.

Thus, here are two indices for human labor development. The historical development of concrete labor manifests as the enhancement of labor productivity, while for abstract labor, it displays as an improvement of the value conversion rate h , which is the efficiency of "producing lives by lives". This continuous improvement is exact the result of innovation labor stated above.

4. Value Creation of Innovation labor

Value created by routine labor is equal to its abstract labor time under given production conditions. How does innovation labor produce labor value via making changes to social production conditions? To clarify this, we need to study the duality of innovation labor. On the one hand, use value created by all concrete labor of innovation labor is seen as improvement of social labor productivity and increment of social wealth. On the other, the labor value of social relations created by its abstract labor is manifested as an enhancement of the value conversion rate h . It strengthens the social human capability of creating value in the form of social relations (capabilities of "producing lives by lives" via social labor) to finally produce new labor value. How do we calculate the new labor value created here?

Reforms led by innovation refer to the evolution of social normal production conditions from an initial state to another final state (the state that the innovation has been completely mature and overspread to whole society). Under these two states, value created by routine labor is different. As to its initial state social normal production condition S_1 , the total time per year put into routine labor by the whole society is T , then the labor value produced by routine labor is $T \times$

(materialized value unit of S_1) = h_1T (humanized value). While under its final state social normal production conditions S_2 , the same labor time T put in by the whole society can create labor value $T \times$ (materialized value unit of S_2) = h_2T (humanized value). As the general measure of value adopted by humanized value is “unit of simple labor force”, this technology innovation allows the value amount of related industries increase from h_1T to h_2T per year.

If the changes to social normal production conditions from S_1 to S_2 are achieved at once without any labor, all the value that exists in the society would only be that created by routine labor under those two production conditions, without any value created by innovation labor. Obviously, this is impossible. Improvement of social production conditions does not drop down from heaven. In order to update social production conditions and enhance the value creation rate, we have to implement innovation labor, including hard work on originality, or improvement and promotion of new technology. After going through a period of social historical time (macroscopic time), innovation labor makes conditions of production normal to a given society constantly developing from S_1 to S_2 with lots of improvements. During this process, this historical accumulation of social value increments is exactly the value created by innovation labor.

Actually, the process of changing social normal production conditions is the popularization and application of new technology in society, as well as the process of the social industrial structure moving from disequilibrium status to equilibrium status. In the third volume of *Capital*, Marx works on the situation that only some industries have applied new technology. To them, and the ones that have not adopted the new technology, the time cost on the same commodity is different, which gives birth to different “individual values” of the same commodity. Individual value decides the “individual production price”, while “general production price” of this commodity is determined by socially necessary labor time as an average. “The difference between his individual price of production and the general one is determined by the difference between his individual cost price and the general one. This is one of the magnitudes that set limits to his surplus-profit” (Marx.K., *Capital*, P781). The development brought by new technology is not only manifested as enhancement of labor productivity on the same commodity, but emergence of new products. Thus we should apply Marx’s method to study the differences of labor value over time led by new technology, or the different levels of humanized value they produce. Measured by humanized value over a certain time period, the individual labor value of industries adopting new technology must exceed that of the industries that do not, since the value creation rate h of the former exceeds that of the latter. However, the general labor value produced by society over a unit of time is equal to the weighted average of these individual labor values. Then, individual labor value produced by these two types of enterprises is either higher or lower than general labor value, and the balance between the two is taken as the further developing potential of innovation labor. As innovation labor gradually develops, this value balance will be realized as real new increased value, which is exactly the value that stems from the creation of innovation labor.

The market appearance of innovation labor is the market price of intellectual property rights. Its total amount equals the value increased via adoption of new technology by various industries. With more and more industries that adopt the new technology, general labor value created within unit labor time will grow continuously. The value balance mentioned above will shrink gradually as well. Once the technology has become the “normal production conditions” of the whole society, this value balance will be eliminated at last, and the value creation process of innovation will be

terminated when all the value it can create has been completely fulfilled. Then, more creative labor will produce social production conditions at a higher level to yield new value. This process will never end.

5. Conclusion

The value creation process of routine labor is the process on a microscopic level of establishing social relations by producing commodities that serve others through living an individual's life. Though innovation labor itself is kind of individual labor, the process for him to produce labor value is carried out through a larger social historical time that changes social normal production conditions, and through overspread and penetration of the fruits of innovation labor into the whole structure of social production. Without changes of social production conditions, innovation labor consumed by individual lives cannot produce any labor value, because it does not yield anything that serves others. The total value of innovation labor for one technology is equal to the value accumulation during the evolution of social productions by labor through invention, improvement and application to filter into the whole social production system. If to display with mathematic expressions, the total value created by innovation labor equals the integral of the value increments created by it over the long time period. Once the spreading process of some innovation has finished, the total labor value produced by this innovation labor has been completely fulfilled. Marxian economics reveals the structure of social relationships based on the levels of routine labor and innovation labor, and thus becomes the grand theory on how human labor builds a market economy structure and where it heads.

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