MARXISM AS THE SCIENCE OF THOUGHT

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INTRODUCTION

1. The present paper relates the simultaneous determination of income distribution and growth, and also new tools / links for empirical investigations / Social Sciences.

2. In order that we must relate the main "chain" of economic thought – Conventional Economic Theory (CET) - with Marxist Economic Theory (MET), the former is dominant academically, and involved with *formal logic* only. This shade has been occupied by CET through opportunism ("self-interest seeking with guile", as defined by O.E.Williamson), and also because MET is deeply rooted in Labor Movement, that is, it was not born as a academic product. the latter survives at margin (as "unofficial" economics including economists supposedly working in a Marxist framework), and once in while is assimilated to CET's perverted tasks, but the fact that MET implies the *dialectical logic* brings epistemological problems that, apparently, seem impossible to be solved. The transition of logical type involved in passing from CET and MET (or formal logic and dialectical logic) has presented itself as a "logical gulf".

3. Therefore, departing from formal logic we need no "bridge" over the "logical gulf". If "our key distinction has been the distinction between **analytic** and **substantial** arguments; and this distinction has to be made, and insisted on, before the habitual ambiguities underlying most epistemological debates can be disentangled. The only real way out of these epistemological is (I say) giving up the analytic ideal…Since questions about 'the nature of the human understanding' so often consist of logic masquerading as psychology, confusions within logic have only too easily led to misconceptions in the theory of knowledge also…" , then we should reflect about the relation between these two logics before accepting Toulmin's assertion: "The only real way out of these epistemological difficulties is (I say) giving up the analytical ideal" (Toulmin, 1999, p. 234, 248). Need we bridge it? Need we abandon analytical ideal?

4. The answer is no. All we need is to insist on unifying both logics. The conjunction of logics may appear as the capitulation of MET to the CET and also to the religion. We will show that this is just appearance, semblance. Essentially, the conjunction brings enhanced tools / links for empirical investigations / Social Sciences.

5. These are the objectives of this paper: to present a transition between two logics and also between CET and MET; to show the conjunction of both contrary poles benefits the Social Science; and to illustrate them with a practical example.

TRANSITION

6. We all know that Conventional Economic Theory is unilateral, based on utility or use-value only; that it despises the substance or value of things and bodies (the soul or spirit; just religion takes care of this other dimension). As Hayek said – "*the more complicated the whole, the more dependent we become on that division of knowledge between individuals whose separate efforts are co-ordinated by the interpersonal mechanism for transmitting the relevant information known by us as the price system*"

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(Hayek, 1991, p. 56). This way CET is attained just to the *form* of things and bodies; the *content* of them is despised and /or dissimulated.

7. By the other side, Marxist Economic Theory (MET) takes both dimensions. Marxism is an integral world view providing the richest framework for analyzing the making and unmaking of social facts. These dimensions are opposed to each other just like day and night, yes and no, and formal logic and dialectical logic. If so, the transition or bridge between both poles was already done. We must therefore present what precise meaning we attach to the word transition.

IN ORDER THAT WE HAVE TO DEPART FROM FORMAL LOGIC.

8. The relation between these two sciences (and both logics) has not being easy. But if we take the *inverse proportionally function*, *y=f(1/x),* to represent this opposition we find that at formal logic space this function or "tension" has no limit (it cannot be *0* neither infinite (∞); because if *0*, then *1/x=0; 1=x.(0)*, and this is an absurd).[2] But the limit of this function does exist, it can be observed as the limit between both logics because this limit is the **unity** (*1/1=1; 1=1.1; 1=1*) or **synthesis** of the dialectical triad (*thesis* or *x, antithesis,* or *y,* and *synthesis, y=x,* bisector line). The formal logic or CET's theoreticians cannot surpass this limit – not just because they see no limit - and we will explain why they are unable to "bridge" this simple line. Certainly they forget that "… *formal logic, it contains the* **germ** *[let us call it "residue"] of a more comprehensive view of the world*" (Engels, 1978, p. 105).
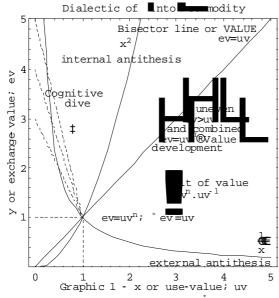
9. Marx wrote that "the wealth of those societies in which the capitalist mode of production prevails, presents itself as 'an immense accumulation of commodities', its unit being a single commodity. Our investigation must therefore begin with the analysis of a commodity. A commodity is, in the first place, an object outside us…" (Marx, 1986, p. 43).

10. If Marx built the category commodity relating its both opposed properties: use-value (uv; x) or utility and exchange-value (ev; y). "Let us consider the **residue** of each of those products [use-value and exchange-value]; it consists of the same unsubstantial reality in each, a mere congelation of homogeneous human labour, of labour-power expended without regard to the mode of its expenditure. All that these things now tell us is, that human labour-power has been expended in their production, that human labour is embodied in them. When looked at as crystals of this social substance common to them all, they are – Values" (Marx, 1986, p. 46), we may conclude that Marx brought up the value category as the limit of the apparently limitless tension between both dimensions of the commodity.[3]

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[2] "The function f(x)=1+1/x approaches the limit as x→∞ (x approaches infinity). However, this result cannot be obtained by substituting ∞ for x in 1+1/x because 1/∞ does not equal zero. A/B=C implies that A=B.C. If 1/∞=0, then 1=(∞).(0). Since this is untrue. The problem must be resolved by a different reasoning, namely by an application of the definition of the limit" (Henderson & Quandt, 1980, p. 366). What other different reasoning if not the dialectical?

[3] On the Mathematical Manuscripts of Karl Marx, more than denouncing the one-sided way of thinking – "the thing is as clear as daylight, so that we cannot wonder enough at the way the mathematicians insist on mystifying it. But this comes from the one-sided way these gentlemen think" (Engels to Marx letter of August 10, 1881) – Marx looked for the "limit value" [Grenzwert] of the finite differences [that] is therefore also at the same time the limit value of the differentials $\frac{dy}{dx} = 1$" He also said that "we know from algebra that if the second sides of two equations are identical, so also must the first sides be. It therefore follows that: $\frac{dy}{dx} = \frac{\Delta y}{\Delta x}$ [1]. Since, however, both x and y, the variable dependent on x, are variable quantities, Δx while remaining a finite difference may be infinitely shortened; in other words it can approach 0 as closely as one wants, so that it becomes infinitely small; therefore the Δy dependent on it does so as well. Further, since [1] it follows therefrom that $\frac{dy}{dx}$ really signifies, not the

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Graphic 1 - x or use-value; uv

(figure labels: Dialectic of [...]nto[...]modity; Bisector line or VALUE ev=uv; x^2; internal antithesis; Cognitive dive; ‡; une[ven] ...>uv and combined ev=uv ®Value development; ...t of value $...^n.uv^{-1}$; $ev=uv^n$; $^n ev=uv$; $\frac{1}{x}$; external antithesis; y or exchange value; ev)

...ment, "the opposition or contrast existing ...tween use-value and value, is, therefore, ...mmodities being placed in such relation to ...t is sought to express, figures directly as a ...h that value is to be expressed, figures ...ementary forma of value of a commodity ...contained in that commodity, between ...product [even science] of labour is, in all ...a definite historical epoch in a society's ...mmodity, viz., at the epoch when the ...cle becomes expressed as one of the ...follows that the elementary value-form is ... of labour appears historically as a ...on of such products into commodities, ...the value-form. We perceive, at first sight, ...ue: it is a mere **germ** [residue], which must undergo a series of metamorphoses before it can ripen into the price-form" (Marx, 1986, p. 67).

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extravagant $\frac{0}{0}$, but rather the Sunday dress (Sonntagsuniform) of $\frac{\Delta y}{\Delta x}$, as soon as the latter functions as a ratio of infinitely small differences, hence differently from the usual difference calculation. For its part the differential dy=dx has no meaning, or more correctly only as much meaning as we have discovered for both differentials in the analysis of $\frac{dy}{dx}$. Were we to accept the interpretation just given, we could then perform miraculous operations with the differentials…In other words, instead of using sleight of hand, one obtained the same result by means of an algebraic operation of the simplest kind and presented it to the mathematical world. Therefore: mathematicians (man…selbst) really believed in the mysterious character of the correct (and, particularly in the geometric application, surprising) result by means of a positively false mathematical procedure, rated the new discovery all the more highly, enraged all the more greatly the crowd of old orthodox mathematicians, and elicited the shrieks of hostility which echoed even in the world of non-specialists and which were necessary for the blazing of this new path… The real and therefore the simplest relation of the new with the old is discovered as soon as the new gains its final form, and one may say the differential calculus gained this relation through the theorems of Taylor and MacLaurin. Therefore the thought first occurred to Lagrange to return the differential calculus to a firm algebraic foundation (auf strict algebraische Basis). Perhaps his forerunner in this was John Landen, an English mathematician from the middle of the 18th century, in his **Residual Analysis**. Indeed, I must look for this book in the British Museum before I can make a judgment on it". For more details on this, the editors of the Russian edition provided an Apendix (IV) about John Landen's Residual Analysis. The editors found that "he obtains the transition to the irrational powers in his examples beginning with the determination of the 'special value' of the ratio… It is not surprising that Landen cannot construct his Residual Analysis without employing in one form or another the concept of limit… The task of finding the derivative of the function f(x) could be represented as equivalent to the analogous task for the power x^P…"(Marx, 1983, p. 29-30, 94, 113, 168-169). Therefore the transition to the limit is easier than we usually think of it. The increasing function y=f(1/x) may be presented as a power function, and suppose y=1000, then x=0,001, so x approaches zero as greater y becomes. This way the power form of 1/x is x^{-1}, as soon as the base number approaches zero it becomes the residue, at the same time it makes itself exponential number. The residue realizes itself as a exponential number, $x^0=1$. Hermann Weyl, in his Symmetry, finds this same reversal process in several crustacean of the lobster type, and conclude: "being a mathematician and not a biologist I report with the utmost caution on these matters, which seem to me of highly hypothetical nature. But it is clear that the contrast of left and right is connected with the deepest problems concerning the phylogenesis as well as the ontogenesis of organism" (Weyl, 1980, p. 38).

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12. By this graph we observe the whole history:[4] "exchange has a history of its own. It has passed through different phases. There was a time, as in the Middle Ages, when only the superfluous, the excess of production over consumption, was exchanged [ev<uv]. There was again a time, when not only the superfluous, but all products, all industrial existence, had passed into commerce… Finally, there came a time when everything that men had considered as inalienable became an object of exchange, of traffic and could be alienated. This is the time when the very things which till then had been communicated, but never exchanged; given, but never sold; acquired, but never bought – virtue, love, conviction, knowledge, conscience, etc. – when everything, in short, passed into commerce. It is the time of general corruption, of universal venality, or, to speak in terms of political economy, the time when everything, moral or physical, having become a marketable value, is brought to the market to be assessed at its **truest value**" (Marx, 1966, p. 29). Getting the truest value means to obtain the substance of an argument at the Toulmin's apparatus derived from formal logic; it means also to approach the "generous" concept of work, "which extends beyond the paid labor [and unpaid labor or surplus value] to incorporate more easily than standard definitions the variety of women's [and men's] often 'invisible' work activities. Such an expansion of the concept of work is implicit in feminist attention to previously neglected activity; in addition to studies insisting on analysis of housework as work, it underlies recent interactionist studies examining a variety of activities not usually recognized as work, including, for example, 'emotion work' in service jobs and in personal life, 'kin work', volunteer work, and the 'interaction work' that women do in conversation. And it connects these studies to the recent focus on caregiving, and to new connections being made between paid and unpaid caregiving, only recently acknowledged as work. These investigations share an emphasis on the processual, constructed character of work, because to they refer to social interaction quite broadly rather than primarily to economic transactions, they point toward a new, more 'sociological' definition of work" (DeVault, 1994, p. 19).

13. Let us take a look at how Marx analyzes history, and at the same time uses the mathematical function we been describing, so that we can observe the "ascending line" that Hayek have seen as "price system", but it actually is the value line.

14. "In the first French Revolution the rule of the Constitutionalists is followed by the rule of the Girondists and the rule of the Girondists by the rule of the Jacobins. Each of these parties relies on the more progressive party for support. As soon as it has brought the revolution far enough to be unable to follow it further, still less to go ahead of it, it is thrust aside by the bolder ally that stands behind it and sent to the guillotine. The revolution thus moves along an ascending line [bisector line or value]. It is the reverse with the Revolution of 1848. The proletarian party appears as an appendage of the petty-bourgeois-democratic party. It is betrayed and dropped by the latter on April 16, May 15, and in the June days. The democratic party, in its turn, leans on the shoulders of the bourgeois-republican party. The bourgeois republicans no sooner believe

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[4] We should include here the discussion A.Einstein and Hermann Weyl initiated about the need of a fourth-dimension (besides space, time and matter) with a negative character (Weyl, n/d, p. 217). But all we need is to work time-dimension as bipolar, that is, representing social history (material-point about the "ascending line"; (s=t=m)) and individual history (material-point about the axis-t) at the same time. Doing this we are able to locate the Oriental Despotism as a material-point about the "ascending line", but we should not forget that "oriental despots were pleased to use eunuchs in many semipersonal and semipolitical spheres of court life and in government proper. Often the eunuchs were entrusted with confidential tasks of intelligence. Not infrequently they were responsible for their sovereign's personal safety (as heads of his bodyguard); and at times they were placed in command of important armies or navies, or in charge of the Royal treasury. Such arrangements proved highly satisfatory since, although mutilated in body and spirit, a eunuch retained his intellectual powers and his ability to act." (Wittfogel, 1057, p. 355).

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themselves well established than they shake off the troublesome comrade and support themselves on the shoulders of the party of Order. The party of Order hunches its shoulders, lets the bourgeois republicans tumble, and throws itself on the shoulders of armed force. It fancies it is still sitting on those shoulders when one fine morning it perceives that the shoulders have transformed themselves into bayonets. Each party kicks from behind at the one driving forward, and leans over in front toward the party which presses backward. No wonder that in this ridiculous posture it loses its balance and, having made the inevitable grimaces, collapses with curious gyrations. The revolution thus moves in a descending line [bisector line or value]. It finds itself in this state of retrogressive motion before the last February barricade has been cleared away and the first revolutionary authority constituted." (Marx, 1978, p. 41).

15. Furthermore, Marx presents two important social facts – the "bolder ally" and the "revolutionary authority" – that we must analyze them carefully, as an "agency" (Marx call them "self-government"). To analyze this "agency" we must get back to the limit of the function that has showed us the relation between contrary poles and/or logics, and also the "ascending line" (value).

16. Still about the limit as the unity or bisector line, It is important to observe two facts that CET (using only the formal logic) tries to aggregate them by the stochastic econometric models (introducing the qualitative variables – "dummy variables"), but it unfortunately has obtained no success. These facts are: 1) Lenin presented us the "vital dive" or "salto vital"[5] to explain the passage from the dominant pole ($y>x$) to the unity; many others classical thinkers has presented the "cognitive dive"; 2) by the other side, seems to be Spinoza the first one to observe the opposed aspect (not contrary, but auxiliary) of this "cognitive dive", that is the "residue" of the dominated pole (x) – that people rarely note it, and the statisticians just denote it as "error" – that has the power and/or potentiality to reverse the process and establish the synthesis or the "positive resolution of the antagonism"[6] – "wild anomaly", Spinoza; "anomalie", Comte; "crazy atom", Plekhanov; "residue" Pareto / Durkheim; "Minimum details", Trotsky; "animal spirit", Keynes; "nitty-gritty", Binmore / Weibull; "the little corner of the world" or "*however terrible and disgusting the dissolution under capitalist system, of the old*

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[5] "Engels plainly employs the salto vitale method in philosophy, that is to say, he makes a leap from theory [antithesis] to practice [thesis]. Not a single one of the learned (and stupid) professors of philosophy, in whose footsteps our Machians follow, would permit himself to make such a leap, for this would be a disgraceful thing for a devotee of "pure science" to do. For them the theory of knowledge, which demands the cunning concoction of "definitions," is one thing, while practice is another. For Engels all living human practice permeates the theory of knowledge itself and provides an objective criterion of truth. For until we know a law of nature, it, existing and acting independently and outside our mind, makes us slaves of "blind necessity." But once we come to know this law, which acts (as Marx pointed out a thousand times) independently of our will and our mind, we become the masters of nature. The mastery of nature manifested in human practice is a result of an objectively correct reflection within the human head of the phenomena and processes of nature, and is proof of the fact that this reflection (within the limits of what is revealed by practice) is objective, absolute, and eternal truth. (Lenin, 1982, p.144) [Griffon is ours]

[6] "The co-operative factories of the laborers themselves represent within the old form the first sprouts of the new, although they naturally reproduce, and must reproduce, everywhere in their actual organization all the shortcomings of the prevailing system. But the antithesis between capital and labor is overcome within them, if at first only way of making the associated labors into their own capitalist, i.e., by enabling them to use the means of production for the employment of their own labor. They show how a new mode of production naturally grows out of an old one, when the development of the material forces of production and the corresponding forms of the social production have reached a particular stage. Without the factory system arising out of the capitalist mode of production there could have been no co-operative factories. Nor could have developed without the credit system arising out the same mode of production. The credit system is not only the principal basis for the gradual transformation of capitalist private enterprises into capitalist stock companies, but equally offers the means for the gradual extension of co-operative enterprises on a more or less national scale. The capitalist stock companies, as much as the co-operative factories, should be considered as transitional forms from the capitalist mode of production to the associated one, with the only distinction that the antagonism is resolved negatively in the one side and positively in the other" (Marx, 1986, volume III, p. 440).

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family ties may appear, modern industry…creates a new economic foundation for a higher form of the family and of the relations between sexes" (Marx, 1986, volume I, p. 460).[7]

17. Among the greatest devastation of all the families promoted by capital (like a typhoon), the "*referential family*" emerges, even as "*residual*", to establish the equivalent exchange (value) at both worlds – material, the "*world of commodities*" or "*things*" and immaterial world or subjectivity. This family actually plays the part of proletariat played at the French Revolution as "*the bolder ally*" (Marx, 1978, p. 41). That means the "*referential family*" actualizes relations by introducing the reciprocity, the value relation and establishes, definitively, the moral (ethic). Elizabeth Bott, at her *Family and social network*, has showed us how a *residue* or a tiny portion of families acts to establish the reciprocity or "exchange of equivalents" (value) at both worlds – immaterial and material one. By the other side, this "referential family" acts just like the "strange attractors" presented by the Chaos Theory (Lorenz's groundbreaking paper, "*Predictability: does the flap of a butterfly's wings in Brazil set off a tornado in Texas?*")[8], guiding us to the "ascending line".

CONCLUSION

18. At this material world, we do have the possibility of establishing a "regulator agency" or "revolutionary authority" - functioning just like the "referential family" (the born agency) – where people may purchase (sell / buy) things at price attached to its value - "market-value" (Marx, 1986, vol. III, p. 178). The mathematical method of *Linear Programming* and/or *Lagrangean function* are essentials[9]

19. These mathematical instruments realize the "necessary connection" Marx talked about (Marx, 1986, vol. III, p. 186). Therefore, if he has showed us "*the fact that this* **intrinsic connection** *is here revealed for the first time… [and that] the transformation*

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[7] "The direct, natural, and necessary relations of person to person is the relation of man to woman. In this natural species-relationship man's relation to nature is immediately his relation to man, just as his relation to man is immediately his relation to nature – his own natural destination. In this relationship, therefore, is sensuously manifested, reduced to an observable fact, the extent to which the human essence has become nature to man, or to which nature to him has become the human essence of man. From this relationship one can therefore judge man's whole level of development" (Marx, 1982, p. 89).

[8] As Catherine R. Stimpson say at the Foreword of DeVault's book – "**Feeding the Family** is about the human necessity of food. To be sure, its setting, Chicago end its environs in the early 1980x, is far less devastated and calamitous the Bangladesh in 1991 [where a typhoon of unimaginable fury had swung across the flat coastal plains of southeastern]. Nevertheless, the men, women, and children of this more secure metropolis must have sustenance. At its most elemental, sustenance is material – a grain, a root, some milk or water. Sustenance has as well two other, linked meanings. First, as culture does its work, the material becomes symbolic, ritualistic, and linguistic. Grain becomes flour, flour bread, bread 'the staff of life' Second, sustenance is intellectual and psychological. The mind and heart have their appetites. Indeed, languages and rituals help to gratify these appetites…Culture and my family, not nature [not even religion], put a spoon in my hand… **Feeding the family** is equally aware of our fears and of the fact that, unlike a great typhoon, they are within our ultimate control. We can feed or starve our fears. If we choose to starve them, we can then feed renewed families and social organization with the nutrients of our energies" (DeVault, 1994, p. vii and ix)

[9] We are doing this because we have listened to the voice of the labor: "The capitalist then takes his stand on the law of the exchange of commodities. He, like all others buyers, seeks to get the greatest possible benefit out of the use-value of his commodity. Suddenly the voice of the labor, which had been stifled in the storm and stress of the process of production, rises: the commodity that I sold to you differs from the crowd of other commodities, in that its use creates value, and a value greater than its own. That is why you bought it… The use of my labor-power and the spoliation of it are quite different things…You pay me one day's labor-power, whilst you use that of 3 days. That is against our contract and the law of exchange. I demand, therefore, a working-day of normal length, and I demand it without any appeal to your heart, for in money matters sentiment is out of place. You may be a model citizen, perhaps a member of the Society for the Prevention of Cruelty to Animals, and in the odour of sanctity to boot; but the thing that you represent face to face with me has no heart in its breast. That which seems to throb there is my own heart-beating. I demand the normal working-day because **I, like every other seller, demand the value of my commodity**" (Marx, 1986, p. 224-225).

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of value into prices of production serves to obscure the basis for determining value itself" (Marx, 1986, vol. III, p. 168), all we shall do is to bring and keep on surface the "hidden regulator" (Marx, 1986, vol. I, p. 163 note 1).

20. The starting point for this "regulator agency" must be the "transportation industry", because it "forms on the one hand an independent branch of production and thus a separate sphere of investment of productive capital. On the other hand its distinguishing feature is that it appears as a continuation of a process of production w**ithin** the process of circulation and **for** the process of circulation" (Marx, 1986, vol. II, p. 155).
How could we construct this "regulator agency"?

21. Considering the unequal development of capitals that compose transportation industry, if we include them all into the Linear Programming problem as *restrictions* ($Cc_i+Vc_i+Pp_i \leq b_i$), where Cc=Constant capital; Vc=Variable capital; Pp=Presumed profit (let us suppose it 10% of Cc), and b_i should be the invoicing corresponding to the sum of all three variables. The *objective function* must be the sum of each variable ($Cc_1+Cc_2+...= Cc_{Total}$; $Z_{Max}=Cc_{Total} +Vc_{Total} +Pp_{Total}$). The solution of this problem makes the *primal* (production maximization) equal the *dual* (cost minimization). CET's theorists would call it "fixed-point", "Pareto's optimum", and so on. We call it Value, "market-value", because price now must oscillate attached to its value. Let us suppose a passenger getting on the bus at point *x,* then s/he get off the bus ten kilometers farther; s/he would pay just for these ten kilometers traveled because this Linear Programming problem solved by an agency - maximized value divided by the total kilometers traveled by all passengers - the quotient would be multiplied the number of kilometers traveled. This agency must be exposed into the internet to be evident its regulating acts (*Cc's* prices revision; the "*Gross Setorial Product*" (GSP – part of Gross National Product, GNP; etc.). This way it is not hidden anymore and everybody can see that market means exchange of commodities only, it is not an invisible hand.

22. So, "an exact representation [re-apresentation; x-reality is re-apresented in mind: $x.x=x^2$] of the universe, of its evolution, of the development of mankind, and of the reflection of this evolution in the mind of man, can therefore only be obtained by the methods of dialectics with its constant regard to the innumerable actions and reactions of life and death, of progressive or retrogressive changes" (Engels, 1978, p. 33). If we confront this representation (x^2) in mind to reality (to the critic; x-reality), we allow ourselves to get the roots of the social facts: $x = \sqrt{x\text{-reality}}$[10]

23. What about the CET's theorists and followers? We can turn the tables because we can employ *reduction ad absurdum* method to show that they represent (in mind) just half of reality by considering the price the unique dimension of the social facts. If they do so, they get *x/2* to be represented in mind. Face-to-face to critique means *x/2=x, x=2.x,* if *x=1,* then *1=2.* This is an absurd. By the way, social scientists should not be afraid of "diving" to life as Pareto once did. Pareto just showed us that he did not make himself as in the manner of God. He had found likeness between Marx's Theory and Holy Trinity (Father, thesis; Son, antithesis; and Holy Spirit as synthesis), "*but here we have got to the frontiers of the probable. We should care about not transposing the terrain of possible and to loaf at the immensurable space of imagination*" (Pareto, 1985, p. 64). He was afraid of "diving", of thinking dialectally.

24. As Engels once said: "as soon as each special science is bound to make clear its position in the great totality of things and of our knowledge of things, a special science dealing with this totality is superfluous or unnecessary. That which still survives,

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[10] Fougeyrollas has built the organic knowledge function or function organique de la pensée: knowledge=f(reality^2), and the critic function: $x = \sqrt{x\text{-reality}}$ (Fougeyrollas, 1991, p. 232).

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independently, of all earlier philosophy is the science of thought and its laws – formal logic and dialectics. Everything else is subsumed in the positive science of nature and history" (Engels, 1978, p. 36).

25. By the other side, the industrial "organization" and/or our position into this *priced-world-of-commodities* can be observed throughout a three-dimensional graphic.[11]

26. Each "material-point" should represent a capital (nation, region, individual, etc.), but we must find in it the method applied by Einstein (Einstein, 1954, p. 341 – *The atom M is a rich miser*) to explain the radioactive disintegration if we want to observe the ontological degeneration Men have disintegrated ontologically themselves, and "*the part given to the community, though relatively small, is still so enormously large (considered as kinetic energy) that it brings with it a threat of evil*" (Einstein, 1954, p. 341). The "referential family" and the "agencies" certainly can reverse this process.

BIBLIOGRAPHIC REFERENCES

BOTT, Elizabeth. *Família e rede social*. 1ª ed., Rio de Janeiro: Francisco Alves, 1976.

DEVAULT, Marjorie L. *Feeding the family: the social organization of caring as gendered work*. 1ª ed., Chicago: The University of Chicago Press, 1994.

ENGELS, F. Anti-Dühring: Herr Eugen Dühring's revolution in science. 8ª ed., Moscou: Progress Publishers, 1978.

EINSTEIN, Albert. *Ideas and opinions*. 1ª ed., New York : Wings Books, 1954.

FOUGEYROLLAS, Pierre. *L'Attraction du future: essai sur la signification du present*. 1ª ed., Paris : Méridiens Klincksieck, 1991.

HAYEK, F.A. *The road to serfdom*. Fiftieth anniversary edition, Chicago: The University of Chicago Press, 1994.

HENDERSON, James M. & QUANDT, Richard E. *Microeconomic Theory : a mathematical approach.*. 3ª ed., New York: McGraw-Hill, Inc., 1980.

LENIN, V.I. Materialismo e empiriocriticismo: notas críticas sobre uma filosofia reacionária. 1ª ed., Moscou: Edições Avante, 1982.

MARX, Karl. *Capital:critic to the political economy*. 8ª ed., Moscow: Progress Publishers, 1986.

MARX, Karl. *O 18 Brumário e cartas a Kugelmann*. 4ª ed., Rio de Janeiro: Paz e Terra, 1978.

MARX, Karl. *Economic and philosophic manuscripts of 1844*. 7ª ed., Moscow: Progress Publishers, 1982.

MARX, Karl. *The poverty of philosophy*. 4ª ed., Moscow: Progress Publishers, 1966.

MARX, Karl. *Mathematical manuscripts*. 1ª ed., New York: New Park Publications, 1983.

PARETO, Vilfredo. *Manual de Economia Política*. 2ª ed., São Paulo: Nova Cultural, 1987.

PARETO, Vilfredo. *La transformacion de la democracia*. 1ª ed., Madrid: Edersa, 1985.

PLEKHÁNOV, G. *Fundamental problems of Marxism*. 1ª ed., New York: International Publishers, 1969.

SPINOZA, Baruch de. *Tratado Teológico-Político*. 1ª ed., São Paulo: Martins Fontes, 2003.

TOULMIN, Stephen. *The uses of argument*. 1ª ed., Cambridge: Cambridge University Press, 1999.

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[11] We need no fourth-dimension continuum, "which is neither 'time' nor 'space'" (Weyl, n/d, p. 217) to represent **history**. "On the contrary, the idea of special dimensions involves six lines drawn from this one point in three opposite directions, and consequently we would have sex of the dimensions" (Engels, 1978, p. 66).

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WEIBULL, Jörgen W. *Evolutionary Game Theory*. 1ª ed., Cambridge, Massachusetts: MIT Press, 1998.

WEYL, Hermann. *Space, time, and matter*. 1ª ed., New York: Dover Publications, n/d.

WEYL, Hermann. *Symmetry*. 1st ed., New Jersey: Princeton University Press, 1980.

WILLIAMSON, Oliver E. *The economic institutions of capitalism*, 1ª ed., New York: The Free Press, 1985.

WITTFOGEL, Karl A. *Oriental Despotism: a comparative study of total power*. 1ª ed., New Haven: Yale University Press, 1957.

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