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What Kind of *Theory* is Marx's Labour *Theory* of Value? A Critical Realist Inquiry

Abstract. This paper uses critical realism to reflect upon the issue of *theory* in Marx's Labour *Theory* of Value (LTV). Like any theory, the LTV is rooted in a mode of theorisation. Rooting the LTV in an *inappropriate (deductivist)* mode of theorisation encourages the formulation of (*quantitative*) versions of the LTV that (a) have severe problems and (b) lack explanatory power. Conversely, rooting the LTV in an appropriate (*causal-explanatory*) mode encourages the formulation of (*qualitative*) versions of the LTV that (a) lack such problems and (b) have explanatory power.

Introduction¹

Whilst much ink has been spilled discussing the nature of 'labour' and 'value' in Marx's Labour Theory of Value (LTV), the nature of 'theory' has often been neglected.² Methodological questions such as 'What *kind* of theory should the LTV be?' are hardly ever asked. This is a serious omission. If, as seems likely, substantive theory can be *positively* influenced by being rooted in an appropriate method or mode of theorisation then it can be *negatively* influenced by being rooted in an inappropriate mode. As a substantive theory, the Labour Theory of Value (LTV) is no different. Rooting the LTV in an inappropriate (*deductivist*) mode of theorisation has a negative influence in the sense that it encourages the formulation of (*quantitative*) versions of the LTV that (a) have severe problems and (b) lack explanatory power. Rooting the LTV in an appropriate (*causal-explanatory*) mode, by contrast, has a positive influence in the sense that it encourages the formulation of (*qualitative*) versions of the LTV that (a) lack such problems and (b) have explanatory power. The mode of theorisation one employs, therefore, has a strong influence upon the version of the LTV one ends up with.

Now, given the fact that there are not only numerous versions of the LTV, but also numerous methodological approaches, I employ two generalising devices. First, I use Sweezy's distinction between *quantitative* and *qualitative* versions of the LTV, placing all versions in one or other of these categories. Second, I use the *critical realist* argument that, basically, there are only two modes of theorisation, namely the deductivist and what I call the causal-explanatory, placing all modes of theorisation in one or other of these categories. The combinations of theories and modes of theorising can be schematised thus:

		Version of the LTV encouraged by the mode of theorisation	
		Qualitative	Quantitative
Mode of theorisation	Deductivist	no	yes
	Causal-explanatory	yes	no

(fig 1. Version of the LTV and corresponding modes of theorisation)

Format

The paper consists of two distinct parts. Part 1 focuses on methodology. It opens with an introduction to the deductivist mode of theorisation before turning to critical realism to (a) establish a critique of this mode and (b) elaborate upon the alternative encouraged by critical realism, namely the causal-explanatory mode of theorisation. Part 2 applies the conclusions from the discussion of methodology to value theory. It opens with an exposition of the quantitative versions of the LTV and explains why they can be conceived of as rooted in the deductivist mode of theorising. It then turns to critical realism to (a) establish a critique of these quantitative versions of the LTV and (b) elaborate upon the alternative qualitative versions of the LTV encouraged by the causal-explanatory mode of theorisation. In this way, methodological arguments emanating from the critical realist perspective, generate both the critique of, and the alternative to, quantitative versions of the LTV, and facilitate an answer to the question: ‘What kind of theory should the LTV be?’

Part 1: Methodology

1.1 Deductivist mode of theorising

Critical realists like Lawson (1997) argue that the dominant mode of explanation in economics is the *deductivist* mode,³ wherein to ‘explain’ something is to deduce a statement about that something from a set of initial conditions, assumptions, axioms, and a law, and/or some other form of constant conjunction of events. Advocates usually claim that the deductivist mode offers

more than just explanation. *Amongst* their claims (justified or not) are the following:

- ◆ Deductivism allows consistent behaviour to be deduced or predicted from antecedents. Some, but not all, advocate the empirical testing of hypotheses via predictive power.
- ◆ Deductivism allows our thoughts to be presented systematically, with clarity and with the (spurious?) precision of mathematics.
- ◆ Deductivism, because it presents an idealised version of reality, allows the relationships between certain important variables to be expressed simply and free from the ‘clutter’ of other, less important variables.
- ◆ Deductivism allows one to understand pathological states (i.e. disequilibrium) by comparing them to hypothetical non-pathological states (i.e. equilibrium).
- ◆ Proving the existence of a unique solution or an equilibrium, under simplified conditions, gives economists a reason to believe that they are “on the right track” as Hausman (1992; 100-1) puts it. (*Cf.* Lawson 1998; chapter 8).

Generally speaking, then, and for reasons that are almost never spelled out, economists appear to believe they have demonstrated something important about the real world when they can consistently deduce a set of conclusions from a set of initial premises.⁴ In virtue of the slightly wider nature of these claims I refer to this mode as the deductivist mode of *theorising*, rather than mode of *explanation*.

Now, whilst the deductivist mode of theorising derives what intellectual support and justification it does from positivism, its employment *in economics* is often extended way beyond any empirical level that most positivists would wish to sanction. Simply put, deductivism often generates purely algebraic or “toy” models (Pencavel 1991, p. 84) which are neither derived from, nor, tested

against, sense experience or empirical data. Because Marxist economic theory is replete with such models, a little elaboration will pay dividends.

Broadly speaking, there are two (incorrect) approaches to 'doing' economic theory. The first approach, econometric modelling, is clearly rooted in sense data and hence empiricism. The economist constructs a model which hypothesises a relationship between certain variables (i.e. a constant conjunction of events), then confronts the model with data. The model is deemed 'adequate' if the hypothesised relationship is consistent with the data. In the second approach, "toy" modelling, the economist constructs a purely algebraic model and makes no attempt to confront it with data. These models are often acknowledged by their advocates to be unrealistic, and are legitimised in various ways – as noted above.

Now, "toy" models appear not to be rooted in empiricism; appear not to involve the events of sense experience; and appear not to involve constant conjunctions of events. This has led some to argue that whilst these models are not immune from criticism, they are immune from the particular criticism offered by critical realists which turns on a critique of constant conjunctions – elaborated upon in section 1.2 below.⁵ This argument is, I think, incorrect. In "toy" models, scientific knowledge is generated by constant conjunctions of events, but because the latter are implicitly built into the model as an *a priori* premise, they do not manifest themselves explicitly as in the case of the empirical relationships of econometric models. This is why some have concluded (incorrectly) that scientific knowledge is being generated by something other than constant conjunctions of events.

To explain how constant conjunctions of events are implicitly built into a model as an *a priori* premise, consider the following example.⁶ In their classic paper on efficiency wage theory Shapiro and Stiglitz (1990: 48) attempt to predict when a worker will choose not to shirk. They write: 'if and only if V^n/e is greater than or equal to V^s/e , the worker will choose not to shirk'.⁷ In what follows, I briefly sketch four reasons why constant conjunctions of events are implicitly built into this "toy" model as an *a priori* premise

- i) Another way of expressing this situation is to write whenever event x ($V^o/e \geq V^s/e$), then event y (shirking behaviour). True, Shapiro and Stiglitz did not arrive at this conclusion via sense experience, rather it is spun out of the axioms, assumptions and theorems of mainstream economics. The presumption, however, must be that, under certain conditions, the hypothesised constant conjunctions of events have a counterpart in reality and could even, perhaps, be observed. If this is not presumed, then the relevance of the model is undermined: why should anyone bother modelling something that does not, however remote, express some feature of reality.

- ii) The whole analysis takes place *at the level of events*. If one event is observed or hypothesised, one can only seek its cause in terms of another observed or hypothesised event. If causality is implied (and if it is not then the whole point of the model is in doubt) then so too are *constantly* conjoined events – causality is elaborated upon in the following section.

- iii) Epistemology presupposes ontology. Ideas about how knowledge of reality is gained from a “toy” model, are intelligible only via the presumption that the socio-economic world is a certain kind of place – i.e. a place where, under certain conditions, whenever $V^o/e \geq V^s/e$, then shirking behaviour will follow. *Iff* the socio-economic world is (presupposedly) characterised by constant conjunctions of events, then building a model that expresses such regular behaviour is a consistent way to obtain knowledge of it.

- iv) The centrality of the built-in event constancy can be seen by considering how useless a model would be if statements couched in terms of events were allowed, but event constancy was not present. Consider how useless the following statement would be: 'if and only if V^o/e is greater than or equal to V^s/e , the worker will, *on some occasions* choose to shirk,

and *other occasions* choose not to shirk'. If constant conjunctions of events are *not* implicitly built into 'toy' models as an *a priori* premise, then nothing can be deduced from the antecedents: the model is useless on its own terms.

Once one understands that constant conjunctions of events are implicitly built into 'toy' models, one can see constancy appearing in the following two general guises.

- i) Constant conjunctions can form part of a "toy" model (e.g.) $y = f(x)$ *ceteris paribus*. Here the constant conjunctions of events that constitute this functional relation have been spun out of the basic axioms, assumptions and theorems, and will not be tested against observed events. The implication, however, (*on pain of irrelevance*) is that the constant conjunctions of events that are built into the "toy" model have a counterpart in reality.
- ii) The constant conjunctions can form part of an econometric model (e.g.) $y = a + bX + v$. Here the constant conjunctions of events may have been spun out of the basic axioms, assumptions and theorems; may have been derived from the observation and recording of events; or may have been simply hypothesised. The difference between (a) and (b) is that in the latter, the alleged constancy will be tested against observed events.

What is significant for our purposes, however, is that in both of these cases the mode of theorisation turns, fundamentally, upon the alleged existence and ubiquity of constant conjunctions of events. Without event constancy, the deductivist mode of theorisation does not get off the ground.⁸

1.2 Critical realist critique of the deductivist mode

From the perspective of critical realism, the deductive mode of theorisation is inappropriate for two reasons. First, because the need to engineer *closed systems* generates a set of problematic and counterintuitive implications; and

second, the deductive mode of theorisation lacks explanatory power. Significantly, the root cause of these difficulties lies in the impoverished ontology presupposed by this mode. These will now be considered in turn.

Closed systems

Now whilst constant conjunctions of events are clearly fundamental to deductivism, they are exceptionally rare phenomena. There appear to be very few spontaneously occurring systems wherein constant conjunctions of events occur in the natural world, and virtually none in the social world. That is not to deny the possibility that constant conjunctions may occur accidentally, or over some restricted spatio-temporal region, or be trivial. But virtually all of the constant conjunctions of interest to science (including economics) occur only in experimental situations. The point of experiment is to *close the system* by creating a particular set of conditions that will isolate the one interesting mechanism. This mechanism is then allowed to operate unimpeded and the results, the constant conjunctions, recorded. For economists, constant conjunctions of events appear to be found only in the 'conceptual experiments' (1994, p.15) that constitute closed systems. Herein constant conjunctions are engineered by satisfying (minimally) four *closure conditions*.⁹

i) Intrinsic closure conditions (ICC).

The *internal state* of the individuals that constitute the system must be engineered in such a way that when acted upon by causal factors x_1, x_2, \dots, x_n , the relevant individual *always* responds in the same, *a priori* predictable way, by initiating action y . Most economic analysis is specified in terms of individual entities (e.g. human beings, or collectivities such as firms) with an intrinsic state. How an individual responds to a causal influence, depends, in part, upon this intrinsic state. For example, the response by a workforce, vis-à-vis levels of output, to the introduction of performance related pay is likely to depend upon factors like *expectations*. The ICC is satisfied when the individual is specified *atomistically*. The atomistic individual is 'inert' in the sense that when acted upon by a causal influence, it will initiate one, predictable and constant course of action.

ii) The extrinsic closure condition (ECC)

The ECC ensures that the system is completely isolated from any *external* influences. This occurs when: (i) all relevant causal factors are internalised within the system, or, if there remain relevant influences extrinsic to the system, either (ii) these factors are specified such that they exercise a perpetually constant influence, or (iii) the elements within the system are isolated from their effects. There are numerous context specific ways to satisfy these conditions.

iii) The aggregational closure condition (ACC).

Even if the ECC and ICC are satisfied, there is still no guarantee that when faced with relevant causal factors the entity will initiate one predictable, unique and constant course of action. This is because economic analysis often has to deal with individual entities combined into groups. The whole point of the union, for example, is to initiate a course of action that one individual acting alone would be unlikely to take. The response of the workforce to causal factors x_1, x_2, \dots, x_n , will vary depending upon the characteristics, and distribution, of individuals or sub-group of individuals that constitute that workforce. Internal constancy must be maintained over an aggregate of individuals. One way of doing this is to focus upon the objectives of some appropriate sub-group - e.g. the trade union as a collectivity is specified to behave as the leadership does.

iv) The reducibility closure (sub) condition (RCsC).

Finally, a sub-condition needs to be appended to the ICC, ECC and ACC to ensure that the number of potential courses of action an individual might initiate is *reduced* to one and hence is unique. Deducing a unique solution requires that the system is fully specified via a series of auxiliary assumptions, or assumptions of *tractability*. These are merely technical assumptions whose sole purpose is to ensure the relevant functions are well behaved, thereby preventing perverse outcomes.

Whilst closed systems are necessary to generate the constant conjunctions of events, they create, as unintended consequences, a series of problematic and counterintuitive implications arise:

- i) Outside closed systems, where constant conjunctions of events are not usually found, (i.e. reality) one would have to conclude that there are no laws. This would be tantamount to saying that nothing governs the non-constant flux of events in open systems; science (including economics) would, then, become a fruitless endeavor.
- ii) It is often the case in natural science that conclusions derived from experimental situations (i.e. in closed systems) are successfully applied outside experimental situations (i.e. in open systems). This occurs *not* because the scientist has discovered a constant conjunction of events, but because the causal mechanism at work has been uncovered and understood, and can, therefore, be used even situations where it does not generate constant conjunctions of events. Because of (a) above, this state of affairs would have no valid explanation.
- iii) Deducing statements about the action of agents operating in a closed system, and transferring them to the action of agents in the open system, commits the fallacy called *ignoratio elenchi*. This entails assuming that one has demonstrated something to be true of X when the argument or evidence really applies to Y which is not the same as X in some respect (Gordon 1991, p. 108). What is 'not the same' is the existence and ubiquity of constant conjunctions of events. The various claims made by advocates of the deductive mode of theorisation in support of this mode (some of which were mentioned in section 2.0) seem to commit this fallacy.¹⁰

Explanation

Following Lipton (1993; 33) I argue that to “explain a phenomenon is to give information on the phenomenon’s causal history”, and on this basis, I offer three reasons why the deductivist mode of theorising lacks explanatory power.

i) Explanation is not merely efficient causality

The “causal history of a phenomena” is not merely (if at all) one couched in terms of the event that happens to precede the phenomena, but in terms of the underlying, transfactually operating, causal mechanisms, structures, powers and relations. One does not, for example, adequately explain (the event of) my office light becoming illuminated simply by pointing to the (event of) flicking of the switch that preceded it. Yet this form of ‘explanation’ is all that is available in the deductivist mode. The need to engineer closed systems means that the model has to remove, theoretically of course, all potential causal factors that might violate the closure conditions. It is crucially important to grasp that *once removed from the model relevant causal factors cannot subsequently be recalled and offered as part of the causal explanation. Relevant causal factors are either included in the model, in which case they contribute to the causal explanation, or they are excluded, in which case they cannot make such a contribution.*

ii) Explanation is not prediction

Prediction does not constitute explanation. The conflation of prediction and explanation is referred to as the ‘symmetry thesis’. Here the only real difference between explanation and prediction relates to the direction of time (Caldwell 1991; 54). Explanation entails the deduction of an event after it has (or is known to have) occurred. Prediction entails the deduction of an event prior to (knowledge of) its occurrence. One can, however, predict *without explaining anything at all*. One can predict the onset of measles following the emergence of Koplic spots, but the latter does not explain measles.¹¹

iii) Explanation does not allow *known* falsehoods

If, as part of this causal story, one opts to include a *known* falsehood, or, which amounts to the same thing, leaves out some important causal factor (falsehood by omission) then the explanation can immediately be objected to simply by pointing to this falsehood. Let me elaborate with a simple example. In explaining how my rubbish bags get ripped during the night, I might hypothesise that it is the work of a fox, or I might hypothesise that it is the work

of a ghost. The explanation involving the fox is advanced because I believe it is a real causal possibility. The explanation involving the ghost, by contrast, is advanced for the pragmatic reason that I want to frighten my young nephew into staying away from the bin bags. Whilst the explanation involving the fox might count as a valid explanation, the 'explanation' involving the ghost, pragmatically useful as it is, has recourse to a known fiction and will not count as a valid explanation. One only has to reflect upon this for a moment to see this conclusion is self-evidently correct: if known fictions are allowed into explanations imagine the bizarre explanations that could be advanced.

In sum, then, the deductivist mode of theorisation suffers from two major flaws. First, a series of problems arise when analysis is couched in terms of closed systems where constant conjunctions of events are allegedly ubiquitous, when socio-economic reality is an open system where such conjunctions are not found. The lack of constant conjunctions means, of course, that the main objective of positivist versions of 'science', namely predictive power, is redundant. Second, lacking explanatory power, the deductivist mode has no alternative but to *substitute* prediction, deduction solution, determination and calculation as the objective of science. The lack of explanatory power combined with the redundancy of predictive power, however, seriously damages deductivism: the objective it pursues is invalid, whilst the only remaining objective is out of its grasp.¹²

The impoverished ontology of deductivism

The problems afflicting the deductivist mode of theorising can, ultimately, be traced back to ontology. Every time one makes a theoretical or meta-theoretical statement, one has already made explicit or implicit claims about the way the world is thought to be; one has made ontological commitments or presuppositions; one has an ontology. And it is these ontological presuppositions render theoretical and meta-theoretical statements intelligible. For example, a theory couched in terms of individuals, is rendered intelligible by the presupposition of an ontology of atomism: such a theory would be rendered *unintelligible* by the presupposition of an ontology of holism.

In what follows the central features of the deductivist mode of theorisation are clearly stated so that, step by step, the ontology that renders these features intelligible is identified. Once identified the inappropriateness of this ontology can be ascertained and, furthermore, the way is prepared (in section 1.4) for an elaboration of the alternative, and by contrast appropriate, ontology that roots the causal-explanatory mode of theorisation.

- Central to the way the deductivist mode of theorising is operationalised are functional relations, generalised as $y = f(x)$. These can also be expressed as laws and styled '*whenever event x then event y*'.
- If functional relations and laws are to have economic meaning (as opposed to 'mere' mathematical meaning) then they *must* imply causality. Causality renders them intelligible. The clear implication, for example, of writing, $q = f(p)$ is that the quantity (demanded or supplied) varies with, and is caused to vary by, price.
- Functional relations and laws are not, however, rendered intelligible by just any account of causality, but by a one based upon constant conjunctions of events, and deriving from Hume.¹³ The use of this notion of causality might arise from a conscious decision, or it might arise by default, because other notions of causality that involve, for example, transfactually acting mechanisms and powers (see section 1.3) would render functional relations and laws unintelligible. Laws as constant conjunctions of events are, thereby, referred to as 'Humean.'
- If, one were to discover a constant conjunction of events in the form of a Humean law or functional relation, one might claim to have *scientific* knowledge. This is because it is the constant conjunction of events that makes possible the deduction or prediction of some event(s) from antecedents. Crucially, then, *constant conjunctions of events drive the nomological machinery of the deductivist mode of theorising.*

- Scientific knowledge in the form of constant conjunctions of events is only intelligible on the presumption that *particular* knowledge is derived via experiencing, and subsequently recording unique, individual, or atomistic events. These events cannot be other than atomistic, since any connection or relation between them would be impervious to sense experience, otherwise the nature of the connections would require prior explanation, thus undermining the explanatory power of sense experience. The ontology, implicit or explicit, is, therefore, one of *atomistic* events.
- Ontology is confined to that which is experienced¹⁴ and is, therefore, of the atomistic events of sense experience.¹⁵ Because these objects are confined to experience the ontology is *empirical*; and because these objects are thought to exist independently of one's identification of them, it is *realist*; The ontology can, thereby, be labeled *empirical realist*.

The deductivist mode of theorising, and the functional relations and laws that operationalise it, are rendered intelligible, therefore, by the consistent presupposition of causality as constant event conjunctions and an empirical realist ontology.¹⁶ Figure (2) illustrates, that this empirical realist ontology consists of two *fused* domains referred to as the empirical and the actual.

Domain	Entity
Empirical	Experiences, perceptions
Actual	Events and actions

(fig 2 Empirical realist or 'flat' ontology)

What *is*, is presumed co-existent with what is (or what could, under certain conditions be) *perceived*. Causality as constant event conjunctions means that if some event is perceived, one can only seek its cause in terms of another perceived event. *There is nowhere else to seek a cause* because any other domain in this ontological spectrum is ruled out. The result is not only an

impoverished ontology, one restricted to the domains of the empirical and the actual, but also a set of implicit (ontological) claims about the world that are, in fact, *at odds with the way the world really is*. The world does not consist merely of events and their experiences: nor does it consist merely of constant conjunctions of these events. This is a serious state of affairs because it means the very building blocks out of which theories are constructed fail to express reality.

1.3 Critical realist alternative: the causal-explanatory mode

Being fully cognisant of the problems that can arise from a lack of ontological reflection, critical realism takes ontology seriously. The following sections demonstrate how critical realism can generate: an alternative ontology; an alternative mode of theorising; and, ultimately, an alternative version of the LTV.

Firmly rejecting constant conjunctions of events as most unlikely features of social reality and, thereby, abandoning the notion of causality as mere regularity, the critical realist is free to seek the cause of an event elsewhere in the ontological spectrum. Attention turns away from the flux of events (constant or otherwise) and towards the *causal mechanisms, social structures, powers and relations* that govern them. Rather than the ontology being restricted to the fused domains of the actual and empirical, the critical realist adds another domain, namely the (metaphoric) 'deep'. Figure (3) illustrates this *stratified* ontology.

Domain	Entity
Empirical	Experiences, perceptions
Actual	Events and actions
'Deep'	Structures, mechanisms, powers, relations

(fig 3 A structured ontology)

In an *open* system, these domains are, typically, out of phase with one another meaning one cannot map (say) the effect of a power or causal mechanism to its manifestation at the level of events and perceptions. This is because powers and causal mechanisms act *transfactually*: once set in motion, they continue to have an influence, even if other countervailing powers and mechanisms prevent this influence manifesting itself. An aeroplane has the power to fly even when it remains locked in a hanger: this power acts transfactually. In Marxist economics transfactuality underpins Marx's notion of tendencies. The causal mechanisms and powers that combine to generate the tendency of the rate of profit to decline act transfactually. These mechanisms and powers are always in operation even when empirically the rate of profit is rising. They are transfactual due to the operation of other causal mechanisms such as technological advances acting in a countervailing manner (for an elaboration of tendencies, see Fleetwood 2000a).

Now, not only is the ontology adopted by CR stratified, it is also *transformational*. Bhaskar establishes the possibility of a transformational ontology from an investigation into the nature of society.¹⁷ Whilst traditionally most commentators recognise that society consists (in some sense) of agents and structures, the debate centres upon the way they interact. With the *Transformational Model of Social Action* (TMSA), Bhaskar enjoins this debate. Nothing happens out of nothing. Agents do not create or produce structures *ab initio*, rather they *recreate*, *reproduce* and/or *transform* a set of pre-existing structures. Society continues to exist only because agents reproduce and/or transform those structures that they encounter in their social actions. Every action performed requires the pre-existence of some social structures which agents draw upon in order to initiate that action, and in doing so reproduce and/or transform them. For example, communicating requires a medium (e.g.) language, and the operation of the market requires the rules of private property. This ensemble of social structures, according to Bhaskar, simply *is* society. As Bhaskar observes:

[P]eople do not create society. For it always pre-exists them and is a necessary condition for their activity. Rather society must be

regarded as an ensemble of structures, practices and conventions which individuals reproduce and transform, but which would not exist unless they did so. Society does not exist independently of human activity (the error of reification). But it is not the product of it (the error of voluntarism) (1989, 36. See also 1987, 129).

The transformational principle, then, centres upon the *causal mechanisms, structures, powers and relations* that are the *ever-present condition, and the continually reproduced and/or transformed outcome, of human agency*. Agents, acting purposefully or consciously, unconsciously draw upon, and thereby reproduce, the mechanisms, structures, powers and relations which govern their actions in daily life.

Switch in the mode of theorising

Operating with a stratified and transformational ontology, the emphasis of investigation necessarily switches from the domains of the empirical and actual and the ensuing event patterns observed (or hypothesised) to the domain of the deep and the mechanisms that govern these events. Investigation switches from the *consequences*, that is, from the *outcomes or results* (in the form of events and their patterns) of some particular human action, to the conditions that make that action possible. As Bhaskar puts matters:

Looked at in this way [TMSA]...the task of the various social sciences [is] to lay out the structural conditions for various conscious human actions - for example, what economic processes must take place for Christmas shopping to be possible - but they do not describe the latter (1989, 36).

Because of the openness of socio-economic systems and the transfactual nature of the causal mechanisms, consequences or outcomes *cannot* be deduced or predicted. The causal mechanisms that govern this human action *can*, however, be uncovered and explained. Explanation is *substituted* for

deduction, prediction, solution, determination and calculation as the objectives of science.

It is worth saying a little more here about explanation. The causal-explanatory mode of reasoning makes significant use of a particular kind of explanation, namely *contrastive explanation*. Lipton (1993; 35) describes this with exceptional clarity:

What gets explained is not simply 'Why this?', but 'Why this rather than that?'...We may not explain why the leaves turn yellow in November, but only, for example, why they turn yellow in November rather than in January, or why they turn yellow in November rather than turning blue.

Whilst contrastive explanation will be employed in section 2.3 note two points. First, the nature of explanation is far richer than that utilised in the deductive mode of theorisation where explanation reduces to efficient causality; prediction/deduction; and often requires the introduction of falsehoods. Second one can now understand the reason for calling the mode of reasoning 'causal-explanatory'. In this mode to *explain* a phenomena is to give information about relevant *causes*. This information is, typically, about the underlying, transfactually operating, causal mechanisms, social structures and powers.¹⁸ It also expresses the main objective of science, namely, explanatory power.

Part 2: Value theory

As noted in the introduction, the existence not only numerous versions of the LTV, but also numerous methodological approaches, requires the employment of two generalising devices. First, I differentiate between *quantitative* and *qualitative* versions of the LTV, placing all versions in one or other of these categories. Second, I argue that, basically, there are only two modes of theorisation, namely deductivist and causal-explanatory, placing all modes of theorisation in one or other of these categories.

2.1 Quantitative versions of the LTV

As the name implies, quantitative versions of the LTV deal explicitly with the (alleged) quantitative relationship between the expenditure of a quantity of labour power and the resultant commodity value, price of production, market value or market price.¹⁹ The term ‘quantitative’, as used here, applies equally to both econometric and “toy” models. Models are quantitative in the sense that when definite magnitudes are attached to concepts like labour, value and price, they are transformed into variables whereupon they can be dealt with in terms of functional relations and/or laws.

Although a little dated, Meek’s work has the merit of succinctly elaborating the conventional wisdom underlying quantitative versions of the LTV, namely the (alleged) existence of “an important *functional relationship* between embodied labour and individual equilibrium prices, which may be expressed in the following symbolic form:

$$\text{Price of a commodity} = c + v + \frac{c + v}{\sum(c + v)} (\sum s) \quad (1)$$

He then adds:

Since all the items on the right hand side of the formula are expressible in terms of quantities of embodied labour, it can plausibly be maintained that there still is a *causal connection*, however indirect and circuitous between... ‘values’ and... ‘prices of production’ (1967; 104, all emphases added).

Put simply, quantitative versions of the LTV allege the existence of a *causal connection* between quantities of labour and prices. This connection is also evident in more recent forms of expression. Consider a fairly typical price of production model.

$$\mathbf{p} = [\mathbf{pA} + \mathbf{w}] (1 + r) \quad (2)$$

where \mathbf{p} is a vector of production prices, r is the (equalised) rate of profit; w is the wage rate; \mathbf{A} , the technology matrix, is an expression for the means of

production set in motion by \mathbf{l} , the vector of labour hours used. This equation suggests, once again, that a causal connection exists between labour input and prices. As noted above, causal connections like these can be expressed as functional relations such as $\mathbf{p} = f(\mathbf{l})$ *ceteris paribus*; ‘whenever event \mathbf{l} (change in labour input), then event \mathbf{p} (change in price)’, or more generally, ‘whenever event x then event y ’.

Models like these are clear examples of the kind of “toy” models discussed above and exemplified by Shapiro and Stiglitz’s model of shirking behaviour. Model (2) effectively says: ‘if r , w and \mathbf{A} remain unchanged, a change in \mathbf{l} **always** causes a change in \mathbf{p} ’. I will neither repeat the four reasons why constant conjunctions of events are built into this model of the LTV, nor the reasons why constant conjunctions can be expressed in terms of “toy” and/or econometric models, because the arguments are exactly the same as those used to illustrate the shirking model in section 1.1.

What is significant for our purposes, however, is the crucial role played by constant conjunctions of events. Without constant conjunctions of events, quantitative versions of the LTV, rooted as they are in the deductivist mode of theorisation, simply do not get off the ground because they lack causal connections.

2.2 Critical realist critique of deductivist versions of the LTV

Part 1 established that the deductivist mode of theorisation suffers from two major flaws. First, a series of problems arise when analysis is couched in terms of closed systems. Second, lacking explanatory power, the deductivist mode falls back on deduction, prediction, solution, determination and calculation as objectives of theorisation. In what follows, I demonstrate that exactly the same flaws afflict quantitative versions of the LTV, using the example of model (2).

Closed systems

The aim of the following four sub-sections is to show how model (2) has to be specified to maintain the closure conditions. It also reveals the extensive use of falsehoods which will be picked up again in section 2.4.

i) Intrinsic closure conditions (ICC).

The ICC is satisfied when the individual is specified *atomistically*, which is another way of saying they are specified as *homo-economicus*. One might, however, object that no individuals are specified in model (2), in which case they cannot be specified atomistically, and hence the ICC is irrelevant in this context. This objection fails to see that although no individuals are *explicitly* specified, they are *implicitly* presupposed. Presupposed individuals include: labourers, capitalists, productive systems, firms, unions, consumers and so on.

Consider the case of expectations. Expectations are especially important for the more recent versions of the LTV because they are keen to emphasise how real or chronological time matters. An agent specified non-atomistically has the power to formulate expectations; whereas if specified atomistically, this property is removed by assumption. Belofiore (1989; 13-5) alerts us to the way expectations on the part of workers and capitalists play a role in forming prices when expected prices are/are not translated into actual prices. Model (2) assumes total income is sufficient to purchase the total output in order to ensure reproduction. But expectations, when frustrated, can prevent reproduction. Some capitalists will make errors of judgement and will be forced into bankruptcy leaving creditors unpaid and workers made redundant - with various knock-on effects for expectation. In order to ensure reproduction, however, the model either assumes these agents are not included, or that all expectations are fulfilled. Either way this is tantamount to (falsely) assuming that agents are atomistic, or there are no expectations.

ii) The extrinsic closure condition (ECC)

The ECC ensures that the system is completely isolated from any *external* influences. Model (2) (falsely) ignores a range of external influences such as: supply and demand, technological innovation, recession, government policy,

political ideology, and so on. To be sure, advocates of these models are well aware of the role played by these factors, and some have been captured within the formation of socially necessary labour, but others simply have to be ignored because including them would make the system unstable.

iii) The aggregational closure condition (ACC).

The ACC ensures that when individual entities combined into groups, the behaviour of the group remains as predictable as the individuals that constitute it. Consider the labour input. The vector of labour hours used \mathbf{I} , does not specify anything about the composition of those who supply these labour hours. However, it must implicitly assume (falsely) that no matter how many or how few labourers are buried within the vector \mathbf{I} , the effect on output remains constant. The ACC is maintained by implicit assumption.

iv) The reducibility closure (sub) condition (RCsC).

Deducing a unique solution requires assumptions of *tractability*. These are merely technical assumptions whose sole purpose is to ensure the relevant functions are well behaved, thereby preventing perverse outcomes. In model (2) the matrix \mathbf{A} expresses the technology or machinery that is activated via labour. In the matrix \mathbf{A} , a_{ij} represents the quantity of i th input used to produce a unit of output j . The relation between inputs and outputs from the machinery operating in conjunction with labour, is assumed never to falter, and to be known *a priori*. As the powerful (Marxist) *labour process theory* reveals, this is an unreasonable (false) assumption. The point is that it (and/or assumptions like it) must be made solely for purposes of mathematical tractability.

Points i to iv demonstrate that model (2) is an example of a closed system. As such, it reproduces the problematic and counterintuitive implications noted in section 1.2 and, thereby, immediately falls foul of the critical realist critique.

Moreover, the need to maintain closure makes it necessary to proceed by assuming there are: no expectations; assuming that no matter how many labourers are buried within the vector \mathbf{I} , the effect on output remains constant; assuming the relation between inputs and outputs is assumed never to falter;

and/or ignoring a range of external influences such as supply and demand, technological innovation, recession, government policy, political ideology and so on. Allow me to make two observations here to prevent any misunderstanding.

First, I am sure advocates of qualitative versions of the LTV are well aware of the range of causal influences that are important for considerations of value. The problem is they have no choice but to leave them out of the model. For example, quantitative versions of the LTV can be augmented to encompass things like the technological change resulting in workplace closures and restructuring; unemployment; state intervention and regulation; declining profit rates and crisis. But this augmentation cannot be accomplished via the deductive mode of reasoning, nor on the basis of closed systems, because these factors do not manifest themselves as constant conjunctions of events. The actual level of unemployment is multi-causal and cannot be deduced or predicted from (say) a change in technology: it is just not empirically true to say that some technological change (x) causes a reduction in unemployment (y). Hence, one cannot (meaningfully) 'bolt' a chain of theoretical pronouncements about things like technology and unemployment onto quantitative models like (2). Furthermore, the above (by no means exhaustive) range of assumptions illustrate the use of known falsehoods and/or falsehood by omission. The significance of such falsehoods will be discussed in a moment.

Second, model (2) contains a vector for labour (**I**). What kind labour is this? Whilst models of this kind almost never spell it out, it does appear to be the kind labour that could be observed interacting with the technology (**A**), and receiving a wage (w) – i.e. it is individual and concrete labour. Yet for Marx, the 'substance' of value is socially necessary and abstract labour. Whilst, to put matters very simply, the mechanism(s) that constitute the market are also those that facilitate the doubling of individual and concrete labour into itself and socially necessary abstract labour, at worst, the market is simply ignored in quantitative models, and at best whatever the market does, it is presumed to have already done it. How this individual and concrete labour doubles into a

unity of itself and socially necessary abstract labour is a mystery that no deductivist model could even begin to explain because they do not have the intellectual apparatus to deal with such qualitative issues. Should any such explanation be given, it would be an ‘add on’ to the model. Whatever the merits of the model then, the explanatory power would lie elsewhere. It is time to discuss explanation more fully.

Explanation

When considering models like (2) I am often minded to ask: Do they actually *explain* anything? In a recent (and I must add extremely interesting,) paper, Saad-Filho offers a clue, writing:

This equation expresses the definition of price of production and it can, theoretically, be used to *calculate the price vector*. However *the equation does not explain* the logical determination of price nor the relation between price and value (1997; 473 emphasis added).

If the model “*does not explain* the (logical) determination of price nor the relation between price and value” what does it explain? Arguably, models like this, rooted as they are in the deductivist mode of theorisation, offer no explanation whatsoever. The reasons are as follows.

Explanation is not merely efficient causality

The explanation of a phenomenon is irreducible to a statement of the event that happens to precede it. Unfortunately for models rooted in the deductivist mode of theorisation, this is precisely all that they have to offer. *All* model (2) states, therefore, is that if r , w and \mathbf{A} remain unchanged then a change in \mathbf{p} can be deduced from a change in \mathbf{I} . If one asks what explains this change in \mathbf{p} the only ‘explanation’ on offer is the change in \mathbf{I} that preceded it.

Explanation is not prediction

As an example of a “toy” model, model 2 does not make empirical predictions. Whilst it could be specified econometrically for this purpose, it would still not

constitute an explanation because, prediction does not constitute explanation. All model (2) allows us to do is to calculate the price vector, that is, deduce the vector of prices consistent with the data on a highly restricted number of variables, namely interest rates, wages and technology.

In both of the above cases, the need to engineer closed systems requires the removal, theoretically of course, of all potential causal factors such as transfactually operating causal mechanisms, structures and powers, because these would almost certainly violate the closure conditions. Once removed from the model these factors cannot subsequently be recalled and offered as part of the causal explanation.

Explanation does not allow known falsehoods

If, as part of this causal story, one opts to include a *known* falsehood, or, which amounts to the same thing, leaves out some important causal factor (falsehood by omission) then the explanation can always be objected to simply by pointing to this falsehood. As noted above, model (2) is replete with falsehoods. Moreover, the further one delves into models like (2), the more one uncovers implicitly and explicitly false assumptions. To show how this can be done, consider the following.

In the deductive mode of theorisation the constant conjunctions of events often drives the inferential machinery by providing the covering law. Whilst the covering law in use here is the law of value, *it is understood in thoroughly Humean terms*. That is, the law of value is treated as a constant conjunction of events. Recall above that model (2) can be conceived of in terms of a functional relation $p = f(l)$. This implies that a change in the magnitude of labour input, causes a change in the magnitude of price *ceteris paribus*. As we saw, this can be generalised using the Humean formula 'whenever event x then event y'. The problem with this (Humean) way of interpreting the law of value is that it is empirically false. It is, I suggest, self evidently true that there is no such constancy between an increase in the amount of labour and an increase in the value, production price, market value or market price of the

commodity. After all, this is why Marx introduces the term ‘socially necessary labour’.

There are, however, counter-arguments that are often deployed to legitimise the use of known falsehoods. The first is a retreat to spurious accounts of abstraction; the second turns on the method of successive approximation or isolation. Since they are common objections, it is important to show that they cannot carry the weight of the counter-argument.

The retreat to spurious abstraction

The first counter-argument runs as follows: ‘all theory has to leave out the inessential, has to abstract from reality, has to make unrealistic assumptions, so all theory is inevitably false in the strict sense of the word’. Now whilst the process of abstraction is complex (Andrew) and cannot be elaborated upon here, I simply put the following point to the reader. Models like (2) are replete with fictions and to suggest they are really abstractions is merely a neat piece of footwork to try and avoid having to discuss methodology. Furthermore, whilst mainstream economists can, in a sense, be forgiven for this retreat to a spurious account of abstraction because their canon has never discussed abstraction, Marxist economists have no such excuse. As Marx himself put matters: “In the analysis of economic forms...neither microscopes nor chemical reagents are of use. The force of abstraction must replace both” (1983; 19). Whilst Marx never really elaborated upon the notion of abstraction, others have, and the need to take abstraction seriously is widely recognised in Marxist circles – it is just ignored when the deductive mode of theorisation is employed to formulate quantitative versions of the LTV.

Method of successive approximation or successive isolation

The second counter-argument runs as follows. ‘Models like (2) are very simple and, necessarily, make many unrealistic assumptions. This, however, is an initial stage of theorisation. Explanatory power can be added via the progressive relaxing of these unrealistic assumptions’. The method being employed, then, is the “method of successive approximation” (Sweezy 1968; 11) or the “method of isolation” (Maki 1992).

Whilst a thoroughgoing critique of this defence cannot be undertaken here, the following brief comments can be made. First, the method of successive approximation or isolation would be appropriate in two situations that almost never arise in the socio-economic world.

- i) When the factors considered in isolation express reality and are not falsehoods. When the earlier analytical stages involve the use of falsehoods like 'no frustrated expectations', then the succession is one of falsehood built upon falsehood.
- ii) When the successive analytical steps merely involve the *mechanical* adding in of factors that were previously excluded, and the overall outcome is a resultant. This mechanical addition is, however, not appropriate for systems where the elements possess emergent properties. When, for example: new technology is introduced to a workplace; a new management regime is installed; the workforce grows to a particular size; or the workforce becomes unionised, its behaviour evolves so that previous accounts of its behaviour are obsolete. Any theoretical propositions that were deduced on the basis of the previous account are immediately invalidated and provide no basis for the mechanical addition of new set of behaviour.²⁰

Second, none of this overcomes the objection that the model is still rooted in a closed system approach. All that has happened, is that one closed system has been added to another (slightly broader) closed system. A bundle of sequentially closed systems do not, however, add up to an open system. One cannot, for example, start with a model that assumes price is reducible to dated inputs of individual and concrete labour, (and deduce a set of conclusions from this) then, relax this assumption and assume that price is governed by socially necessary abstract labour, because if the latter is true, then the former is false and so the conclusions derived from it were also false.

The method of successive approximations, or successive closures might, therefore, be more accurately termed the 'method of successive falsehoods' or the 'method of successive closed systems'.

It appears that quantitative versions of the LTV, rooted as they are in the deductivist mode of theorisation and its emaciated ontology reproduce the two major flaws afflicting this mode in general. First, they engender a series of problems arising from analysis couched in terms of closed systems when socio-economic reality is an open system. Second, lacking explanatory power, quantitative versions of the LTV *substitute* prediction, deduction, solution, determination and calculation as the objectives of science. Devoid of explanatory power, the only thing left to do, and so the whole point of constructing quantitative versions of the LTV, is "to calculate the price vector." *And that really is that.* This state of affairs makes quantitative versions of the LTV not so much 'wrong' as *irrelevant*. Performing formal operations such as calculating the price vector in a model that has no connection to reality is as (ir)relevant as calculating the speed of a pig flying between London and New York.

2.3 Qualitative versions of the LTV as causal-explanatory

This final section argues not only that Marx appears to have employed something like the causal-explanatory mode but, more importantly, that this mode encourages the formulation of qualitative versions of the LTV that possess explanatory power.

Marx starts from the 'stylised fact' that under capitalism, in contrast to all other modes of production, human labouring activity appears in an estranged or alienated form. It appears in the form of the products this labouring activity produces, namely commodities as values.

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 the commodity (Marx1983: 43).

This starting point appears to be motivated by something like the following transcendental question: What economic, social, political, ideological relations (mechanism, structures, powers and so on) would explain how and why human labouring activity appears in the value form? Marx retroduces to a set of underlying relations, (deep structures) and connects them to *their* observable forms.²¹ Although Marx does not, of course, explain his *modus operandi* in these terms, it appears to be a perfectly acceptable, although not a well known, interpretation. According to Sayer:

Marx's object is the social forms assumed by economic phenomena...His 'analytic' consists of an excavation of the conditions that must be supposed for the phenomena to assume such forms, that is, of the essential relations that must exist if the world as experienced is to be possible. Marx's reasoning is thus eminently transcendental, although pace Kant, his is a transcendental realism (Sayer 1979; 37).

Not only is Marx's ontology stratified, it is also *transformational*. According to the Marxian TMSA presented here, society is the ensemble of material-technical and socio-economic relations. These relations are, however, not thrown together in a heap, there is a principle of organisation, and that principle is transformation. The relations are treated as the ever-present condition, and the continually reproduced outcome of, human agency. As Marx, pre-empting critical realist terminology puts matters:

The conditions...of the direct production process... are themselves equally moments of it, and its only subjects are the individuals, but individuals in mutual relationships, which they equally reproduce and produce anew. The constant processes of their own movement, in which they renew themselves even as they renew the world of the wealth they create (Marx 1974; 712).

Whilst Marx appears to make use of something like the stratified and transformational ontology set out above, he adds another element: the ontology is also fetishized. To say things are fetishized, means that there is a rather special relation between the way things are and the way they appear. It is not just that things appear in a distorted form, but (a) the distortion is systematic and (b) this systematically distorted form is the only way these things can appear.

The following diagram not only summarises the stratified, transformational and fetishized ontology presupposed by the LTV, but also illustrates how this can be interpreted along critical realist lines.

Domain	Entity
Empirical	Exchange of money for commodities
Actual	Co-ordination of the labouring activity of millions of atomistic producing units
'Deep'	Material-technical and socio-economic relations; private property, alienated labour, the state and so on

(fig 4 Marx's stratified (and fetishized) socio-economic ontology)²²

From critical realism to Marx

The causal-explanatory mode of theorising, and the socio-economic ontology in which it is rooted, generates an entirely different problematic to that generated by the deductivist mode of theorisation underlying quantitative versions of the LTV. The causal explanatory mode encourages an enquiry into the nature of (alienated) labouring activity and its form of appearance, whereas the deductivist mode enquires solely into the magnitude of value. Without the intellectual apparatus with which to carry out an enquiry into qualitative phenomena such as these, deductivism is capable of doing no more than dealing with quantitative phenomena such as value magnitudes.

Using the causal-explanatory mode of theorisation, and explicitly recognising this structured, transformational and fetishized socio-economic ontology, one is encouraged to interpret the problematic of Marx's LTV as follows. What 'deep' structures, mechanisms, relations and powers are necessary to sustain a system whereby the relations between people (as producing units) appear in the form of a relation between things (commodities)?

In addressing this problematic, I will make use of contrastive explanation. I will *not* ask: Why does labouring activity under capitalist conditions appear in the value form? Rather I will ask: Why does labouring activity under capitalist conditions appear in the value form when labouring activity under non-capitalist conditions does not require this form? Framing the explanation in terms of this contrast pinpoints what is essential to capitalism. As it happens, this is exactly how Rubin (1990; chapter 2) proceeds - although he does not mention the mode of reasoning he uses. I will follow Rubin by comparing relations under a stylised non-capitalist system to relations under a stylised capitalist system in order to bring out the specifics of the latter.

Let us begin, however, by reflecting upon the centrality of labouring activity and reminding ourselves that, as Elson puts, the Labour Theory of Value is primarily about labour and the form (of value) it takes: it ought to be described as the *Value Theory of Labour*.²³

At the basis of all human life is a material-technical transformation brought about by labouring activity whereby matter is transformed from one state to another, more useful, state. This *material-technical* process is characterised by the following points:

- It is spatio-temporally universal.
- It results in the production of a good or service, and relates therefore to the domain of use value.
- It requires material-technical co-ordination. That is, raw materials and machinery must be spatially and temporally co-ordinated.

- This co-ordination is ensured if, when, and to the extent, material-technical relations are established. This is what Marx has in mind when he refers to the *material relations between things*.

If this material-technical transformation is to occur, however, millions of isolated, atomised producers must enter into relations to co-ordinate and regulate their labouring activities. And this entails a *socio-economic* process characterised by the following points:

- ◆ Material transformation occurs by humans co-ordinating and regulating their socio-economic activities. Thus, material-technical relations necessarily imply socio-economic relations.
- ◆ Not only are various material entities produced and reproduced, so too are the relations into which people have entered.
- ◆ The socio-economic process captures social relations between people as opposed to material relations between things. This is what Marx has in mind when he refers to the *social relations between people*.
- ◆ Socio-economic relations are spatio-temporally specific, in that the mode of co-ordination of humans differs fundamentally in space and between epochs.²⁴

Although human labouring activity is spatio-temporally universal, the form in which it appears is spatio-temporally specific. Whilst our concern is with the form under which labouring activity occurs under capitalism, one way of actually grasping the specifics of this form is to contrast it with stylised non-capitalist forms.

Stylised non-capitalist system

Consider a highly abstract, stylised, non-capitalist system such as a slave society, feudal society, Stalinist planned economy or even a capitalist enterprise consisting of spatially differentiated production sites. Production takes place on isolated, unconnected production sites and requires the existence of a conscious agency (i.e. a slave owner, feudal lord, central planner or manager) to

design and oversee a production plan. Although the actual administration of the plan might be very difficult the principle upon which it works (however badly) is quite straightforward. This conscious agency, possessing knowledge of material-technical properties of things and production sites, ensures that labour, semi-finished objects and raw materials are spatio-temporally distributed in accordance with the technical requirements of the various stages of the productive processes.

Things flow from production site A to B to C (etc.) because the conscious agency, knowing a range of material-technical properties, knows that each subsequent site has the technical ability to transform the thing into some other thing that is more useful. By issuing instructions based only upon material technical properties, relations are established between the sites. The relations that ensure the uninterrupted co-ordination of things are *permanent*, *direct* and *social*.

- ❖ They are *permanent* because once they are established by the conscious agency, they endure until removed or altered.
- ❖ They are *direct* because they are established without the intervention of any other vehicle. The connection is directly between plant and plant at the behest of the conscious agency.
- ❖ They are *social* because the central agency has already 'socially sanctioned' the products and thereby the human labour expended upon them. Sanctioning occurs, typically, in the interests of the central agency.

Under this stylised non-capitalist system, then, things move between productive stages because some conscious, central agency, possessing knowledge of material-technical properties of things and production sites, is able to establish a set of permanent, and directly social relations to co-ordinate production. The things themselves are, however, unimportant for the establishment of the relations which co-ordinate the processes that produce them - the importance of this will become clear in a moment.

Stylised capitalist system

A capitalist socio-economic system one where labouring activity is carried out by millions of atomized, isolated, individual producing units - ranging from the self employed, to trans-national corporations. These producers never meet to discuss the co-ordination of their labouring activities, nor are their activities co-ordinated by a central agency. Yet clearly their labouring activity is co-ordinated (however badly) or the socio-economic system would grind to a halt. Labouring activities are indirectly co-ordinated via the systematic exchange of the products of these very activities, commodities. And the systematic exchange of commodities involves the systematic evaluation of these commodities, that is, the assignment of appropriate value or, more concretely, (money) price tags.

In this stylised capitalist system, the three production sites mentioned above, are now owned by completely different firms. Things still circulate between independent production sites, but now for different reasons. Things pass from A to B, not *because* of any technical ability possessed by B to transform that object into something useful (although this is an obvious presupposition) but because a sum of money passes from B to A. Firm A is no longer interested in firm B's material-technical ability to transform things, they are no longer merely given away, but are now sold.

Things now cease to be mere things and become, in addition, *commodities* produced solely for exchange on the market. They cease to be mere use values and become, in addition, exchange values. There are no *permanent* production relations between A and B initiated at the behest of a conscious agency. Production relations are now only established through the successful exchange of commodities. The relations that ensure the uninterrupted co-ordination of things are *indirect, social and transient*.

- ❖ The relations are established not directly via a conscious agency, but *indirectly* via the commodity successfully entering into an exchange for money.

- ❖ The relations, whilst now indirect, remain *social*, but two important changes have occurred. (a) The temporal location where the 'social sanctioning' takes place has changed vis-à-vis the production process, from *a priori* to *a posteriori*. It is now *not* in production but exchange that the labour embodied²⁵ in the commodity is recognised as socially necessary - or not. (b) The person(s) who do the sanctioning have changed from the conscious agency to consumers - of capital in this example.

- ❖ The now indirectly social relations only endure as long as commodity exchange endures, hence the relations are *transient* and in need of continual renewal or re-production.

If and only if, the commodity finds a buyer on the market can the socio-economic relations and, therefore, the material-technical relations be established. Failure to sell, results in the failure to establish relations of production and therefore the failure of production and reproduction. The things themselves, the commodities, are now crucially important for the establishment and maintenance of the relations, and therefore for the co-ordination of the very process which produces them. Unlike non-commodity production, commodity production is based upon a curious system whereby it is the very existence of the product as a *bona fide* commodity that creates the conditions for the reproduction of that commodity.

And in all this the market is crucial.²⁶ It is only via the market that the physiological, concrete, individual labour expended in the production of a commodity doubles into a unity of itself and abstract, and recognised as socially necessary. In other words, it is *essentially* via the market that one isolated producer comes to obtain implicit knowledge about the productive conditions of the multiplicity of other producers, and can, therefore, attempt to co-ordinate his/her labouring activities with these others. How well or how badly the market actually does this is irrelevant for the purposes of this paper; the point is merely that under capitalism, the market *is* the process by which this co-ordination occurs.

It appears that this qualitative version of the LTV is explanatorily powerful and relevant. It explains how relations between people (as producing units) appear in the (value) form of a relation between things (commodities) by invoking the ‘deep’ causal mechanisms that facilitate production and exchange under capitalism.²⁷

So, what kind of theory should the LTV be?

At this point, the question that motivated this paper, namely: ‘What *kind* of theory should the LTV be?’ can finally be answered – negatively and positively. The LTV *should not* be the kind of theory that is quantitative in nature and rooted in the deductivist mode of theorisation because, lacking explanatory power, this kind of theory leads, ultimately to irrelevance. The LTV *should*, by contrast, be the kind of theory that is qualitative in nature and rooted in the causal-explanatory mode of theorisation because, unencumbered by pursuing inappropriate objectives, and possessing explanatory power, this kind of theory leads, ultimately, to relevance. Moreover, by elaborating upon the conditions necessary for the reproduction of key socio-economic relations, the quantitative version of the LTV presented here can be thought of, in critical realist terminology, as a *Transformational Theory of Socio-Economic Order*.

Conclusion

None of the foregoing argument requires the abandonment of the basic premise of Marx’s value analysis, namely, that the reason commodities are valuable at all is because they involve human labouring activity, and the value form is the form in which this activity manifests itself under capitalism. What must be abandoned, however, is the “untenable claim to complete exactness” encouraged by the deductive mode of theorisation. I find myself in agreement with the following comment from Joan Robinson because, in it, she seems to put her finger on exactly what should and should not be abandoned in Marx’s LTV.

[B]y and large, the main determinant of difference in prices, say between a packet of pins and a motor car, is obviously differences in labour cost...Moreover, the movement through time

of relative prices is predominantly influenced by changes in labour costs...By giving up the an *untenable claim to complete exactness*, the labour theory can establish the right to be considered broadly true and highly important (Joan Robinson 1964; 50, emphasis added).

Wedded to the deductivist mode of theorising, however, one cannot give up the “untenable claim to complete exactness” because from this perspective, there is nothing else.

Notes

¹ I would like to thank Hans Erbar, Giulio Garofala, Clive and Tony Lawson, Brian Pinkstone, Steve Pratten, Andrew Sayer, and two anonymous referees for insightful comments on various drafts of this paper.

² The fact that Marx himself never refers to ‘Labour Theory of Value’ makes no difference for this paper because the concept a long history within Marxist economics, although as we will see, the meaning is less than clear.

³ The deductive mode of theorising (or simply ‘deductivism’ as I will occasionally call it) is also variously known as: the covering law model; Popper-Hempel theory of explanation; the deductive-nomological or D-N model (*nomos* being Greek for law); and where the law is statistical the D-N model becomes the I-P model (‘inductive probabilistic’). Hausman (1992; 288-9) also sees the D-N model as the “dominant view” amongst economists.

⁴ Sraffian or neo Ricardian economists are advocates of the deductivist mode of theorising and the quantitative versions of the LTV – although they do not use this terminology. They at least offer a defence of their method by claiming it can be used to represent the functional relations that constitute the ‘core’ of the economy; relations outside the ‘core’ require a different mode of theorisation. Pratten’s (1999) critical realist critique of neo Ricardian

economics is equally applicable to Marxist economists who also advocate the deductive mode of theorising and quantitative versions of the LTV.

⁵ Parsons (1996, p.421) and Hands (1999, pp.174-178) make arguments similar to this and Lawson (1999) replies.

⁶ I specifically do not use an example drawn from Marxist economic theory here (part 1 of this paper), to avoid giving the impression that my critique is located at the level of theory: it is located at the level of methodology and subsequently (in part 2) motivates a critique at the level of theory. Furthermore, the use of an example drawn from mainstream economic has the following advantage. Once (in part 2) some quantitative versions of the LTV are also shown to be “toy” models, it is easy to see that some Marxist economics and mainstream economics are identical vis-à-vis method.

⁷ Where V_e^n denotes the expected lifetime utility of an employed non-shirker; and V_e^s denotes the expected lifetime utility of an employed shirker.

⁸ To avoid any misunderstanding, here, please note the following. The distinction between “toy” and econometric models is not the same as that between deductivist and causal-explanatory modes. Both “toy” and econometric models are rooted in deductivism. Even if one starts with a “toy” model, and proceeds to estimate it (which many economists don’t) one is still operating within a deductivist framework.

⁹ One does not avoid using closed systems simply by introducing some notion of probability. A stochastically closed system, as opposed to a deterministic system, is still a closed system. The alleged constant conjunctions, now assumed to hold under some probability condition, are still generated by a confluence of causal mechanisms, and should anything in this array of causal mechanisms alter, the probabilities would alter. The initial specification of the relationship between the events in the system would no longer be as initially described meaning, in effect, it was a different system. See footnote 18.

¹⁰ Although the argument is developed from the practice of natural science, it is applicable to social science in general, and mainstream economics in particular, for two reasons. (i) Mainstream economists quite readily admit they are using the methods of the natural sciences. (ii) If human agency is real, then (a) human agents could always have acted otherwise, and (b) human action must make a difference to the social world. If (a) and (b) are accepted, the social world cannot be a closed system.

¹¹ Even supposing an econometric model successfully predicted some economic event, the regression might be grounded in no economic theory whatsoever, or, as is more likely, grounded in a theory that contains fictional claims. Successful prediction does not amount to explanation.

¹² On the role of explanatory power as a criteria for evaluating theories see Boylan and O’Gorman (1995), and Fleetwood (2000b).

¹³ For Hume’s work on causality see Hume (1888, 1978, pp.73-94; 155-172); and for a critical discussion see Bhaskar (1978, chapters 1,2 & appendix); Meikle (1985, especially chapters 1 and 7); and Cartwright (1995).

¹⁴ Notice the transposition of ontology into epistemology, a move Bhaskar (1978, p. 36) refers to as the “epistemic fallacy”. Realists do not argue that positivists are committed to the claim that events in sense experience are all that exist. Realists do argue that positivists transpose questions of ontology into questions of epistemology so that in effect, they are committed to the claim that all that exists vis-à-vis scientific enquiry are events in sense experience – i.e. they cannot countenance unobservable entities such as powers.

¹⁵ One might object that the use of “toy” models appears not to require an ontology of sense experience. Whilst it is true that writing $y = f(x)$ does not require that episodes of y and x were experienced, the clear implication (on pain of irrelevance) is that they could, under certain conditions, be

experienced.

¹⁶ Deductivism cannot, consistently, be rooted in anything other than empirical realist ontology; and conversely, empirical realist ontology cannot, consistently, engender anything other than deductivism, or at least something similar – it cannot, for example engender a causal-explanatory mode. Inconsistency can, of course, lead to any combinations of ontology, causality and modes of reasoning.

¹⁷ Bhaskar 1987, 104-136 and 1989, chapter 2; Lawson 1998, chapter 12.

¹⁸ Notice that our ability to explain why leaves turn yellow in November is not merely an extrapolation from past inductions, but due to our knowledge of causal mechanisms and powers. Anyway, in some circumstances leaves may fall off before November. Whilst this would disallow statements about laws and constant conjunction between colour and month (i.e. the system is not closed), it does not disallow statements about the tendencies generated by causal mechanisms and powers that are transfactually at work. See Runde (1998) for an elaboration of critical realist views on causal explanations.

¹⁹ For ease of exposition I couch the discussion simply in terms of (undefined) labour and (undefined) price. For the purposes of this paper, nothing is lost in using this terminology and is avoid distractions like the distinction between concrete (physiological) and abstract labour, the transformation problem, the role of money in expressing price and so on. I will, however, make comments where absolutely necessary.

²⁰ For a fuller discussion of this, see Lawson (1998; 127-33). See also footnote 5 above.

²¹ On Marx's use of retrodution see Wilson (1991: ch 6).

²² Note that, *contra* Roberts (1999) there is nothing in the critical realist approach that means the domains of the deep, actual and empirical cannot be related – although such a relation can be contingent. In this context, however, social relations between people, necessarily, take the fetishised form of relations between commodities. Furthermore, as will become clear in a moment, and again *contra* Roberts, there is nothing in the critical realist approach that prevents an historical analysis. The relevant causal mechanisms, social structures and relations are temporally located. To avoid any misunderstanding note that whilst one can observe labouring activity, one is observing concrete and individual labour and not abstract and social and/or socially necessary labour. Furthermore, whilst one can observe the exchange of labouring activity for a wage, one cannot observe the co-ordination that is going on between the labouring activities of millions of atomised producers.

²³ This section draws heavily on Rubin's (1990) and Elson's (1979) interpretation of Marx; and on Marx 1982; 42-8).

²⁴ Whilst the human race would obviously perish without this labouring activity, this is not the reason why Marx treats labouring activity as central to human society. Rather, in labouring activity humans reproduce themselves as a species that consciously thinks and acts (production) upon the natural world, and reflects upon this thinking and acting. As Marx puts it: [L]ife activity, productive life itself appears to man only as... the need to preserve physical existence. But productive life is species life...The object of labour is therefore the objectification of the species life of man. (1975; 328-9).

²⁵ I hesitate to use this (fraught) term but stick with it for the sake of simplicity.

²⁶ I would look to the very kind of processes Saad-Filho (1996; 467-76) sketches out as part of the way forward. I would also consider more sophisticated versions of the market process, such as those that I have tried to develop in my own work on Hayek (Fleetwood 1995, 1996).

²⁷ A full exposition of these ‘deep’ structures, mechanisms, relations and powers would amount to nothing less than an exposition of how the various components of the capitalist system articulate with one another, and would involve a gradual transition from the abstract to the concrete – which is clearly beyond the scope of one paper.

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