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# HUMAN POTENTIAL, WELLBEING AND PHILANTHROPY: A PHILOSOPHICO- ECONOMIC INQUIRY

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**Purpose:** This methodological paper addresses the formalism of the model of evolutionary learning paradigm conceptualized within the framework of sustainable development paradigm. **Methodology:** The methodological substance of this paper crosses interdisciplinary boundaries of epistemology, political economy, and mathematical modeling. **Findings:** A cogent model of sustainability and sustainable development is formalized. It uses synergistic circular causation relationships between human potential, philanthropy and the measurement of wellbeing objective criterion. The conceptual and applied perspectives of this kind of evolutionary learning model is presented. **Research limitations:** More availability of time series data would extend the applied part of the paper to the case of Canadian Natives discussed here. **Practical implications:** The evolutionary learning model of circular causation between human potential, philanthropy and the objective of wellbeing of the interactive, integrative and evolutionary variables is shown to apply to the labor market adaptation issues of Canadian Natives. **Social implications:** The principal contribution of the paper is its epistemological groundwork of formalizing a moral-social reconstructive model of unity of knowledge. The positivistic and normative unified perspective of the model is presented. **Significance:** The paper is of a substantively original nature in its worldview and methodology. It also embraces a substantive review of the literature on the evolutionary phenomenology of social change.

**Keywords:** Evolutionary learning model, Participatory development, Epistemology of unity of knowledge, Mathematical modeling, Canadian Native wellbeing issue

## INTRODUCTION

The study of the entitled theme in this paper will be examined by the concept of endogenously interrelated variables and goals. The field of

development is emphasized. Endogeneity in development issues as mentioned in the title will be done by way of the recursive and thus evolutionary complementarities between the

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selected variables representing what we will refer to as the good things of life. The unity between such variables and their relations will project the meaning of the episteme of unity of knowledge relating to the specific problem and issue under investigation. The specific problem studied revolves around the methodology, formalism and application of the overarching organic relationship between the three interrelated entitled topics.

This paper will thus formalize the problem of interrelationship between the three topics in an interconnected way of invoking what such organic relationships mean in reference to the episteme of unity of knowledge expressed as complementarities between the selected variables addressing wellbeing. The concept of wellbeing is thereby formalized within the episteme of unity of knowledge on the specific problem of using and regenerating philanthropy by feedback in resource allocation and development between the donor and the recipient via a reproductive system of inputs and outputs.

The integrated approach described above constitutes the essential Islamic way of addressing any socio-scientific theme on the basis of its epistemology of divine oneness referred to as Tawhid. This is a Qur'anic term. We will invoke it in this paper to imply the divine law of oneness of God as a systemic precept. Such an epistemology of divine systemic oneness can be used for the socio-scientific study of 'everything' (Barrow, 1991) beyond only mainstream Islamic issues, for example the wellbeing issue of Canadian Native People in the light of their spirituality question in human resource development.

## OBJECTIVE

This paper will formalize the following endo-

genous organic relationship and examine its application to the problem of uplifting the development of marginalized communities: A rigorous formalism is undertaken. A fairly extensive literature review in evolutionary economics is done to compare the contending methodologies with the one on evolutionary learning that we use in this paper.

On the applied front, we will examine the wellbeing of Canadian Natives. This is done by using the formalism of endogenous relationship between human potential as creativity, and feedback of resources (philanthropy in the productive sense) that is generated in the circular causation relationship between human potential, wellbeing and resource development to realize the goal of sustainability.

Such an organic relational formalism by endogenous feedback between the critical targets conveys the meaning of interactive, integrative and evolutionary learning in this paper. Its empirical perspective is conveyed by the method of circular causation between the selected variables.

## HUMAN POTENTIAL

### The Concept of Human Potential

The concept of human potential invoked in this paper is that of human learning within and along with the specifics of the world-system in which the human being participates and actualizes by the Mind and Matter interrelated dynamics. Thereby, human potential comprises the perpetual capability of the human becoming in the interactive realms of consciousness, actuality, and sustainability involving meaningful pairing between self and the other. This particular precept is a central note in the Qur'an towards conveying a systemic symbiosis in the framework of unity in diversity derived from the law of

oneness, Tawhid. In this extended meaning lies the endless domain of learning with the microcosms of the world-system in which the human individual and totality interacts, integrates, and thereby rises to evolutionary learning processes enabled by the Mind-Matter dynamics.

By Mind we will mean in this paper the domain of consciousness that is invoked by a well-defined relationship between the inner self (Heart) and the thoughtful mind. By Matter we will mean the specific and the general domain of worldly relations generated by participation. In this is invoked the objectivity and social actions and their responses. The realm of Matter thereby overarches the domain of cognition into sensate and abstract comprehension. These exist in cohesion as an organic unity; not one without the other.

Finally, there exist the critical interrelationships in evolutionary learning between the realms of Mind and Matter, within which are found the meaningful circular causation relations between consciousness, actuality, and human sustainability understood as extended social and scientific interrelations – the socio-scientific order. The inner self as the seat of objectivity establishes a teleological relationship representing circular regeneration between Mind and Matter.

So what comprises human potential according to the evolutionary learning worldview? Human potential is centered on a unified worldview of interrelations between Mind and Matter born out of consciousness. The Mind in turn is primordially affected by the heart. That is the soul. But consciousness in the soul and in connection with the material and cognitive order emanates from the episteme of unity of knowledge in relation to the unification of the world-system and its details.

Within this overarching worldview of unity of knowledge in relation to the generality and particularity of issues under investigation, human potential comprises the integration of the seats of consciousness. The organization of consciousness in relation to the cognitive framework of a unified world-system stands on the episteme of unity of knowledge. The application of the Matter-Mind unity of being and becoming arises from the evolutionary learning process model of conscious organization of the emergent social and moral reconstruction.

### **The Participatory Example of Business for Human Potential**

An example of human potential is found in the kind of Blue Ocean Strategy prescribed by Kim and Mauborgne (2005). They prescribe an inclusive model of Blue Ocean participatory and cooperative worldview in business. The Blue Ocean Strategy is contrary to the Red Ocean Strategy of mainstream economic theory and application, behavior and organization, pedagogical practice, and intellection. Consequently, the entrepreneurial spirit and human development reflected in the cognitive and real world constructs mark the ever-progressive learning processes of participation and complementarities by organic relations of unity between the micro, forming the aggregate (e.g. macro) entities.

With the free entry of firms in an environment of participatory market exchange, sustainability of survival and growth can proceed on. Survival is manifest along the learning path of complementary relations between the good choices of life as determined by epistemic consciousness of goodness (Moore, 1962). Human potential thereby is neither the property

of perfect and imperfect competition economic theory, based as these are on optimality and steady-state conditions of the marginalist world-system. In fact, all of economic theory, both microeconomics and macroeconomics, is found to be premised on the postulate of marginalist hypothesis (Dasgupta, 1987).

Shackle (1972) remarks on the fictive nature of optimality and steady-state equilibrium born out of the postulate of marginalism in mainstream economics: "Equilibrium is a solution, and there is, in the most general frame of thought, no guarantee that a problem which presents itself, unchosen and undersigned by us, will have any solution, or that it will not have an infinity of solutions. In either case, there is no prescription of conduct."

Human potential and its incorporation in human development and the design of sustainability must necessarily hold knowledge to remain incomplete, while learning perpetually in the framework of unity of being and becoming (Prigogine, 1980). Besides, since knowledge cannot be complete in the evolutionary learning universe, and because human potential in the midst of evolutionary learning embraces all of reality comprising mind and matter, therefore, knowledge regarding anything cannot be complete in the small and in the large. This is a Tawhidi property of the moral law in relationship to the learning universe in human intellection.

Only instantaneous knowledge formation is fictively possible. But such instantaneous knowledge-flow, as an equilibrium state in the core of economics is a fictive concept in the conscious universe. Such is the idea of the core of economics conceptualized by Debreu (1959). In reference to this knowledge-based interrelated

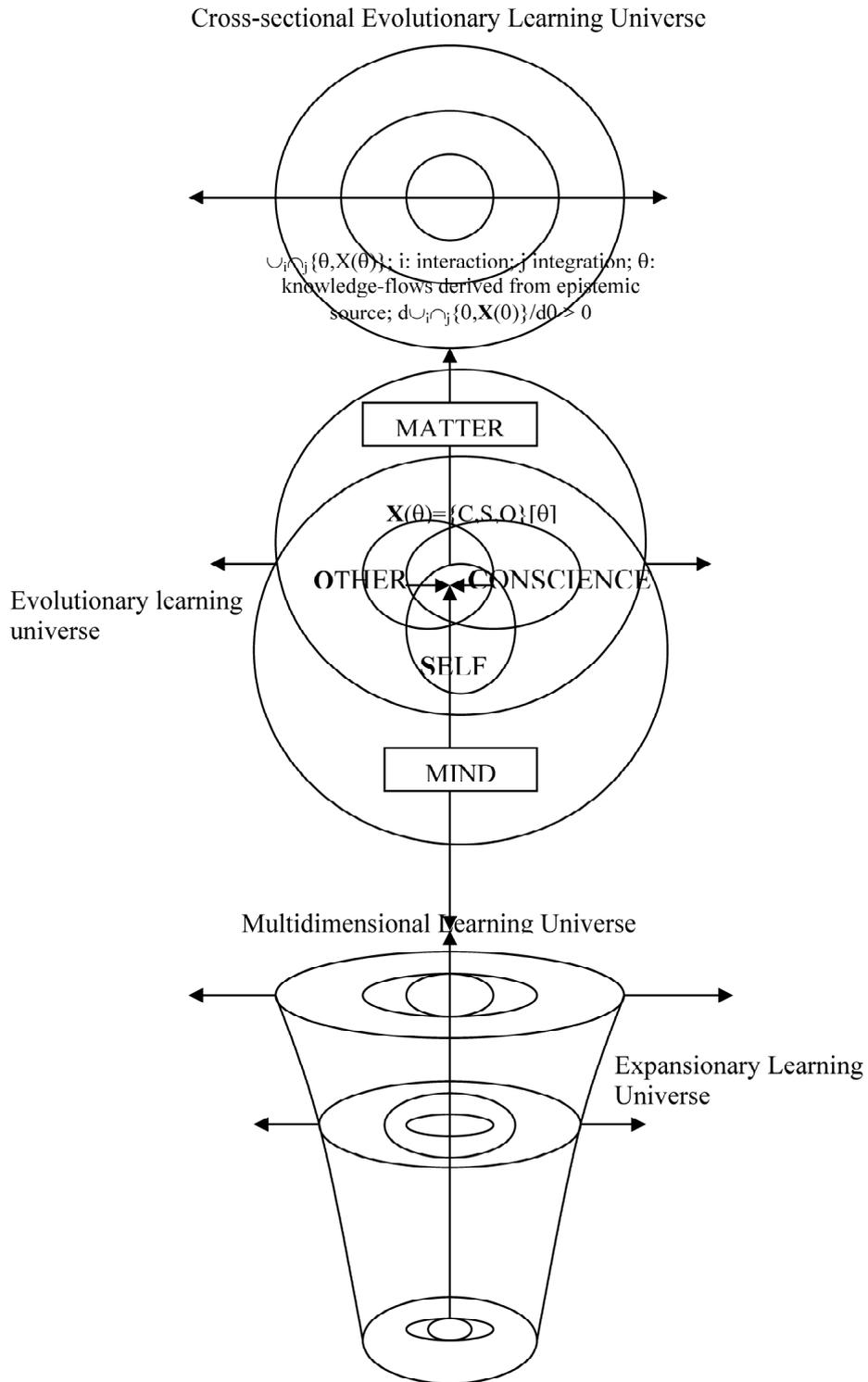
cause and effect writes Shackle (1972): "... we cannot claim Knowledge, so long as we acknowledge Novelty. Novelty is the transformation of existing knowledge, its reinterpretation; in some degree necessarily its denial and refutation."

### **Placing Human Potential in the Evolutionary Learning Formalism**

Figure 1 displays the above kind of regenerative interrelations that explain the concept of evolutionary learning, and thereby establishes the extended version of the concept of sustainability. The regenerative interrelationship ensuing in this way is studied by means of what we call circular causation. It is the method representing the connected world-system of symbiosis and continuity by organically unifying relations (pairing = complementarities) vis-à-vis Tawhid as unity of knowledge and its constructed world-system of unity of being. This empirical method is similar to but widely extended version of Myrdal's idea of cumulative causation. In this paper both the conceptual and empirical and applied version is endowed to the concept of circular causation in the light of unity of knowledge.

Figure 1 is a depiction of the circular causation concept of evolutionary learning model used in this paper. Circular causation as the model of endogenous interrelations implies that human potential is an evolutionary learning precept that arises from and continues to sustain a given epistemic praxis (Sztompka, 1991; Resnick and Wolff, 1987). The emergent dynamics of interrelations comprise the domain of Mind. They are organically connected with Matter in the sense of circular causation in the evolutionary learning worldview. The emergent nature of recursive evolution centered in the interrelationships that

**Figure 1: Evolutionary Learning in Mind-Matter Universe**



Mind-Matter interaction and integration harbors is like the Mobius String that remains intact in the space-time structure (Boslough, 1985). The world-system of human potential is thus continuously and perpetually re-origivative. There is no terminal point as by optimum and steady-state resource allocation conditions.

Time, which is essential in defining the condition of the terminal points, as in optimum control theory, is not the essential element of learning. Time is replaced by knowledge-flows as the substantive element of learning, change, reconstruction, and continuity. Time simply records such coordinates. Knowledge causes them to occur. Events are happenings as coordinates defined by the tuplet of knowledge-flow and its causation on social actions and responses that occur over time 't'. We define an event along the learning trajectory by  $(\theta, \mathbf{x}(\theta);t)$ .

In the absence of steady-state equilibrium and optimal states of events in the absence of the time factor, which is replaced by knowledge-flows occurring continuously and perpetually, the concept of human potential acquires its substantive meaning. It is different from the concept of human capital, a neoclassical resource. Consequently, many of the economic analyses and the social and public perceptions relating to human capital and economic growth and development are altered. These are replaced by altogether new concepts. We will note such substantive changes in concepts and application.

**Formalizing Human Potential in the Evolutionary Learning Universe Governed By The Episteme Of Unity Of Knowledge**  
*The Epistemic Characterization of Consciousness (Mind)*

Let  $\Omega$  denote the epistemological premise of unity of knowledge. It is treated as a topological super-

space, that is with the unbounded open cardinality measure (Rucker, 1989). Here is a Tawhidi formalism derived from the Qur'an as it applies to 'everything'.

Let  $\theta \in \Omega$ , such that there exists a mapping denoted by S that maps  $\Omega$  on to knowledge-flows denoted by  $\{\theta\}$ . Thus,  $S(\theta) \in \Omega$ , for  $\theta \in \Omega$ . Thereby, for different  $\theta$ -values,  $\{\theta_1\} \cup \{\theta_2\} \in \Omega$ ;  $\{\theta_1\} \cap \{\theta_2\} \in \Omega$ ;  $\{\theta_1\} \cup \cap \{\theta_2\} \in \Omega$ ;  $\{\phi\} \in \Omega$ ;  $\Omega \equiv \Omega$  in the sense of closure of the very large-scale universe of  $\Omega$  (Tawhid as the moral law of divine oneness). Thereby,  $\{\phi\} \cup \Omega' = \Omega$ , where  $\Omega' \subset \Omega$ ;  $\{\phi\} \cap \Omega' = \{\phi\}$ .  $\Omega'$  has the topological properties mentioned here. Finally, any monotonic functional of the values as shown here has the same topological order-preserving properties.

The expression,  $\{\phi\} \cup \Omega' = \Omega$ ,

$$\text{where } \Omega' \subset \Omega; \{\phi\} \cap \Omega' = \{\phi\} \quad \dots(1)$$

has a special significance. Expression (1) means that a set of false statements signified by  $\{\phi\}$  represent disjoint or differentiated relations. This is contrary to the organically unified ones, which are treated as the set of truth statements denoted by  $\Omega'$  in the normative sense of the episteme of unity of knowledge. Relations in  $\Omega'$  are established by pervasive complementarities, or in development model by participation between entities.

In summary, the fundamental epistemological characterization of unity of knowledge in terms of the super-topological relations is as follows:

$$(\Omega, \Sigma) \equiv \Omega \rightarrow s[\{\theta\} \subseteq \Omega \cup \{\phi\}] \dots \rightarrow s[\Omega] \quad \dots(2)$$

Expression (2) can be written as the disjoint composition of the following two independent chains:

$$(\Omega, \Sigma) \equiv \Omega \rightarrow s[\{\theta\} \subseteq \Omega] \dots \rightarrow s[\Omega] \quad \dots(3)$$

$$\text{and } (\Omega, \Sigma) \equiv \Omega \rightarrow s\{\theta\} = \{\phi\} \dots \rightarrow \theta\{\phi\}[\Omega] \quad \dots(4)$$

with the topological properties stated on  $\{\theta\}$  and  $\{\phi\}$ .

Now if a measure-theoretic function, say  $\mu(\cdot)$ , is applied to the functionals in expression (3) and (4), then the following result holds:

$$\mu(\{\phi\}) = 0; \text{ therefore, } \mu(\{\theta\} \subseteq \Omega') = 1 \quad \dots(5)$$

Therefore,  $\Omega \rightarrow_s \{\theta\} \rightarrow_s \Omega$ , as  $\mu(\Omega') = 1$ ,

$$\text{with } \mu(\{\phi\}) = 0 \quad \dots(6)$$

This summary relation has significant implications on the existence of evolutionary learning equilibriums in open and unbounded subspaces that are contained with the closed and unbounded super-space of  $\Omega$  (Choudhury, 2011). The mathematical results in such a case of continuous and differentiable mappings of  $\{\theta\}$  gives rise to an extension of the Fixed Point Theorem to evolutionary ones that are not locally bounded and closed, and hence not locally compact (Nikaido, 1987). But in the large scale universe of  $\Omega \rightarrow_s \Omega$ , the evolutionary learning functions become compact once again.

**The Epistemic Characterization of Materiality (Matter)**

By a further extension of the mappings on  $\{\theta\}$  and  $\{\theta^c\}$  the complement of  $\{\theta\}$  on  $\Omega$ , such that  $\cup \{\theta^c\} = \{\phi\}$ , causes a monotonic positive transformations to exist, such as  $\{\mathbf{x}(\theta)\}$ . The  $\{\mathbf{x}(\theta)\}$  (likewise,  $\mathbf{x}^c(\theta^c)$ ) as vector, matrix, tensor and further relational extensions of the same, represent the material domain of the knowledge-induced (de-knowledge-induced  $\{\theta^c\}$ ) variables

of various systemic entities with which the Mind and Matter relate.

Consequently, all the topological properties of the  $\{\theta\}$  and  $\{\theta^c\}$  spaces apply to  $\{\mathbf{x}(\theta)\}$  and  $\{\mathbf{x}^c(\theta^c)\}$ . It is to be noted that,  $\mathbf{x}$ -type or  $\mathbf{x}^c$ -type functionals cannot apply in  $(\Omega, S)$ . That is because by the property of super-cardinality of this super-topology any functional transformation on this limiting super-space will be of the super-cardinal or infinite dimension. That would be absurd for any cognitive artifact to assume.

**The epistemic characterization of human potential**

Human potential denoted by the functional  $h(\cdot)$  is the totality of monotonic positive transformations of the type  $\{h(\mathbf{x}(\theta))\}$ .  $h(\cdot)$  denotes continuously and positively differentiable functional with respect to  $\theta$ -values. Such functionals emerge along the paths of evolutionary learning processes.<sup>1</sup>

The functional  $h(\cdot)$  can be composed of different levels of micro-aggregation. Such as, we can distribute  $h(\cdot)$  by categories of target groups, sectors, regions, projects, etc.  $h(\cdot)$  can also be constructed as index, such as human potential index for targeted marginalized groups in the context of development, etc. With such aggregation a development planning can be designed, centered on the concept of human potential rather than human capital. The latter is a neoclassical concept that does not fit into the phenomenology of our evolutionary learning model.

<sup>1</sup> By Taylor's theorem of expansion of a continuously differentiable around a point, say  $\theta^*$ , hence  $\mathbf{x}^*(\theta^*)$ , we obtain,  $h(\mathbf{x}(\theta)) = h^*(\mathbf{x}^*(\theta^*)) + \sum_i \{(x_i - x_i^*)/1!\}^* [(dh/x(\theta)) \cdot (dx_i(\theta)/d\theta)]_{\theta^*} + \sum_i \{(x_i - x_i^*)^2/2!\}^* [(d/d\theta)(dh/x_i(\theta)) \cdot (dx_i(\theta)/d\theta)]_{\theta^*} + \text{higher terms.}$   
Here  $\mathbf{x} = \{x_1, x_2, \dots, x_n\}$

Writing the above expression in the following form yields the development meaning of change:  $[h(\cdot) - h^*(\cdot)]$  representing advancement in human potential is caused (on the right-hand side of the Taylor series) by factors of enhancement in resources and the many-faceted factors on which development as a process stands, while allowing the human potential to progress positively by the evolutionary knowledge value that reflects unity of being and becoming between the good things of life. Elsewhere, I have explained the primal characteristic of the good choice of life in development to be the *dynamic* basic-needs or life-sustaining choices that are aggregated from the micro-level to the complex nature of social aggregation (Choudhury, 2013).

The characterization of human potential in the development model is as follows: Development (D(..)) may be defined as the following extensively participatory process along the evolutionary learning path with many interacting, integrating, and evolving entities that remain complementary to each other in circular causation interrelations. Such an experience in the normative perspective of moral-social reconstruction remains continuous and pervasive. Such continuous learning experience conveys the meaning of sustainability and of participatory development as a process. Indeed, the South Commission (1990) defines the meaning of socioeconomic development in the broad sense encompassing economic, social and human factors as follows:

**To sum up:** development is a process of self-reliant growth, achieved through *participation* of the people acting in their own interests as they see them, and under their own control.

We can now define development as a process, D(..), in terms of the relations concerning human potential as compounded functional relationship signifying complementarities between the critical variables denoted by  $\{\theta, x(\theta)\}$ . The epistemologically induced evolutionary learning path by  $\{\theta\} \in (\Omega, S)$  signifies sustainability:

$$\Delta(\phi(\eta(x(\theta)))) = \{\theta\} \circ \{\xi(\theta)\} \circ \{\eta(x(\theta))\} \circ \{\phi(\eta(x(\theta)))\} \dots(7)$$

The composite mapping in expression (7) means that the epistemic knowledge defines the parameters of development via its induction of the development variables. For example, financial and real resources, GDP, HDI, HPI, GEM, employment, price level, trade, capital/labor ratio, GINI coefficients, etc. are now induced by the

normative condition of circular causation between the variables. Such  $\theta$ -induction generates the endogenous relations between the development variables. The variables then feed into the specific human potential indexes and their further monotonic transformations.

The latter kind of mapping is shown by  $f(..)$  in the complementary implication of the compound index. An example of the complementary index of specific categories ('i') of human potential functions is  $h(.) = \prod_i h_i^{\alpha_i}(..)$ . Here  $\alpha_i$  denote  $h_i$ -elasticity coefficients of the total  $h(.)$ -index.

A further disaggregation is also possible, given  $i = 1, 2, \dots, n$ . An implication of such a disaggregate composition of the human potential index is a new form of human development index that can be composed of the human poverty index, human empowerment index, corruption index, equality index and the like (Demarting, 1999; UNDP, 1997, 1998, 1999, 2000 issues; Millennium Development, May 25, 2012).

## WELLBEING

### The Concept and Measurement *a la* Unity of Knowledge as the Functional Ontology

Since the concept of human potential is a dynamic form of generating and mobilizing human resources within a complex of evolutionary learning processes, it upholds a permanently creative nature. Therefore, when we link the concept of human potential with the issues of philanthropy and wellbeing through circular connection between these goals, then the concept of philanthropy must be understood as productive resources that generates self-reliance and sustainability among and by the participants.

Thereby, the circular causation endogenous interrelationship between human potential,

philanthropy and wellbeing cannot result in idle charity. This precisely is the meaning underlying the Qur'anic Zakat. Zakat is a mandatory due of 2.5 per cent of liquid wealth for human resource uplift at the grassroots. Hence, such endogenous interrelationships between the three elements hold up both a dynamic and a sustainable perspective of human resource development.

Therefore, philanthropy as a morally embedded productive resource feeds into and regenerates human potential. Such recursive relationship and its sustainability along the evolutionary learning processes is formalized and measured by the objective criterion of wellbeing. We therefore define wellbeing as the functional of the complementary and regenerated interrelationships between philanthropy and human potential. Such organic interrelations evaluate and assign levels of unification between the variables in the light of the episteme of unity of knowledge. The normative reconstruction of the unifying relations between the selected variables and their functions represent the ethical reconstructive possibilities using philanthropy and human potential as goals. Such organic interrelations are as explained in Figure 1.

The concept and empirical nature of the organically unifying relationships comprise the normative worldview. The evaluation takes its course from the positive stance of the issues as they are to what they ought to be. Thus the positive and normative states together form the possibility for moral-social reconstruction in the applied and empirical sense. The empirical implication underlying the positive evaluation of the relationships between the variables representing philanthropy and human potential is to lead into simulation to realize the changes required for

transforming a differentiated state of human wellbeing into a system of complementary relations. Complementarities and participation represent the sure signs of unity of knowledge and its moral-social reconstruction of the specific issues under consideration. This is the consequence of the action of unity of knowledge in practical experience as Qur'anic pairs.

In this sense of a normative simulation of the positive state of differentiation or a reconstruction of a weak form of complementary relationship between philanthropy and human potential, the wellbeing objective criterion assumes both a conception and measurement of unity of knowledge. The underlying methodology will be explained later.

Wellbeing as conception in objective criterion explains the cognitive stage of understanding unity of knowledge as episteme at the *functional* ontological level. No metaphysical meaning of ontology is invoked here. *Functional* ontology presents the operational formalism derived from the episteme of unity of knowledge. The operational consequences of unity of knowledge are found in the reconstructed world-system of complementary (participatory) relations between the selected variables of the specific problems under study.

### **The Evaluative Stage of the Wellbeing Index: From 'Estimation' to 'Simulation'**

The evaluative stage of wellbeing comprises the conceptualization, measurement, and inferential and policy-theoretic implications of social reconstruction. This version of the functional ontology of unity of knowledge reflecting the episteme working itself in the framework of unity of the specified problems and issues at point reflects two stages of valuation of facts.

Firstly, there is the ‘estimation’ stage. In this stage the circular causation relations between the representative variables  $\{\theta, x(\theta)\}$ , as of human potential index  $h(\theta, x(\theta))$ , are ‘estimated’ by the facts as they are.

Secondly, the ‘estimated’ evaluation of results is examined for unity of relations between the variables. That is the degree of complementarities between the variables is evaluated. A lack of complementarities between the selected variables of the problem at hand represents the sign of differentiation and marginalism.

Such a lack of complementary state is improved by the method of simulating the ‘estimated’ results. This ‘simulation’ process marks the stage of improving the degree of unity of knowledge in normatively characterizing the problem and issue at point.

Such empirical evaluation between ‘estimation’ and ‘simulation’ can be further disaggregated into the component human potential indexes  $h_i(\dots)$  and the multifarious systemic variables involved in such an exercise of disaggregation. In expression (7) such a disaggregation is explained by the non-linear processes that remain embedded in economic development. Further on, the positive monotonic transformation,  $f(h(\theta, x(\theta)))$ , extends the disaggregation levels to various micro inter-systemic relations.

The empirical and policy-theoretic, institutional, structural and discursive nature of participatory changes that are altogether embedded in the development process by transition from the ‘estimation’ stage to the ‘simulation’ stage marks the being and becoming of stages of evolutionary learning in unity of knowledge. Empirically, the participatory change that ought to be induced in

the development process is carried out by the ‘simulation’ stage.

In this paper the specific issue is that of attaining higher levels of the human potential index by means of inducing complementarities between the variables of the disaggregate human potential indexes. The empirical exercise of leading the ‘estimation’ stage to the ‘simulation’ stage is carried out by the system of circular causation relations. Below we explain such a model further.

**The Phenomenological Model of Wellbeing in Terms of Human Potential Index**

**Stage 1: The Conceptual Formalization of Wellbeing**

Our selection of the wellbeing function is human potential index in the sense of the composition of the development process symbolized in expression (7). We re-write the problem of evaluation of wellbeing as follows, subject to its subsequent empirical ‘estimation’ followed by policy-theoretic ‘simulation’ of the ‘estimated’ results. We refer to the stages between ‘estimation’ and ‘simulation’ together as to ‘evaluate’.

$$\begin{aligned} \text{Evaluate } h(x(\theta)) &= \prod_i [h_i(x(\theta))]^{a_i}, \\ i &= 1, 2, \dots, N \end{aligned} \quad \dots(8)$$

Subject to the circular causation relations:

$$x_j(\theta) = f_j(x'(\theta)) \quad \dots(9)$$

where,  $x_j(\theta)$  is an element of the vector  $x(\theta)$ ;

$x'(\theta)$  is the vector  $x(\theta)$  without  $x_j(\theta)$ ,

$$j = 1, 2, 3, \dots, n$$

The ‘estimated’ values of the  $x_j(\theta)$ -variables in the system of relations signified by expression (9) are theoretically fed into expression (8) to yield

the measure of the human potential index as the wellbeing index. But this part of the theoretical exercise is not empirically possible, for values of the coefficients, while they are estimable in the system of equations of expression (9), are not estimable in expression (8): Data on  $h(x(\theta))$  are not available *ad hoc*. Thus stage 1 remains simply as a theoretical construct of the Wellbeing Function with its evaluation stages of ‘estimation’ and ‘simulation’.

Now Stage 2 of ‘estimation’ leading to ‘simulation’ enters. This is the main empirical exercise pertaining to wellbeing and human potential index.

**Stage 2: The Empirical Formalization of Wellbeing**

We note that expression (8) is simply a monotonic form of the relation,<sup>2</sup>

$$\theta = F(x(\theta)) \quad \dots(10)$$

Expression (10) can be taken as the proxy for wellbeing or human potential index in the epistemic sense of ‘estimation’ followed by ‘simulation’ of knowledge-value in respect of unity of knowledge (i.e., complementarities, and organic participation).

The empirical system (9) and (10) together with their multifarious equations and variables now represents the *functional* ontological nature of ‘estimation’ and ‘simulation’ as the formal model of circular causation. We write this complete circular causation system as follows:

‘Estimation’ Stage: Positivistic state of examining complementary relations between variables or otherwise

$$x_j(\theta) = f_j(x'(\theta)) \quad \dots(11)$$

where,  $x_j(\theta)$  is an element of the vector  $x(q)$ ;

$x'(\theta)$  is the vector  $x(\theta)$  without  $x_j(\theta)$ ,

$j = 1, 2, 3, \dots, n$

$$\theta = F(x(\theta)) \quad \dots(12)$$

The estimation of the coefficients of these equations is done by (i) the data on  $x(\theta)$ -vector; and (ii) the ranks generated for  $\theta$ -values by noting the observed degrees of complementarities between the selected  $x(\theta)$ -variables. Such a rank-assigning exercise is done by examining the degree of complementarities of the  $x(\theta)$ -variables and determining their corresponding pair-specific  $\theta$ -ranks by the variables selected. Then these pair-specific  $\theta$ -values are averaged against the paired variables as they appear. Such rank-setting can also be carried out additionally by institutional and group discourse in rank-selection. The  $\theta$ -values can also be assigned algorithmically.

The ‘estimated’ coefficients present the positivistic state of the complementarities, and thereby participative nature of development by focusing on human potential, philanthropy and wellbeing as complementary goals. But as in the neoclassical case of marginal substitution between variables, which signifies a non-learning state of resource generation and mobilization, the negative signs of the coefficients or their weakly positive signs in the estimated circular causation variables will contradict complementarities and participation. Such results would negate the development process in the human potential context with sustainability gained along the

<sup>2</sup> The expression for  $\theta$  is the implicit function derived from  $h^* = h(\theta, x(\theta))$  in expressions (7) and (8). By the condition of continuously differentiable over continuums of knowledge, time and space dimensions, the Jacobian determinant of the inversion will exist. Hence,  $\theta = F(x(\theta))$ . This equation comprises expressions (10, 12).

evolutionary learning path of unity of knowledge of Mind-Matter interrelationship.

### **'Simulation' Stage: Normative State of Examining Complementary Relations**

The 'simulated' normative corrections to the 'estimated' positivistic results now follow. The simulated coefficients are assigned by changing their values to positive or near positive ones by institutional and policy discourse to the extent of possibility in attaining such simulated coefficient values. Such a simulation exercise marks the potential for moral-social transformation required in realizing expression (7) of development and sustainability.

The results of simulated changes in the estimated coefficient values show up in the new 'predictor'  $x(\theta)$ -values; and thereby on the simulated  $\theta$ -value in expression (12). The simulated relations are thus obtained including the 'simulated' as well as the 'estimated'  $\theta$ -value as the proxy of human potential. In this way, the human potential index is premised on knowledge-flows that are gained by discursive learning in a continuously participatory development scenario. Such a development scenario marks sustainability in the good things of life (e.g., *dynamic* basic-needs regime of development).<sup>3</sup>

### **Summary of the Circular Causation Method Applied to the Methodology of Unity of Knowledge**

The phenomenological model of unity of knowledge and its conceptualization and application to the issue of human potential comprises the totality of the expressions (8)-(12) along with the details of the 'estimation stage', the 'simulation stage', and the 'predictor stage',

all as explained and encapsulated by the term 'evaluating' the wellbeing objective.

Through the combined method in such a case, the positive and the normative consequences are combined to establish the non-demarcation rule between these, and between the deductive and inductive reasoning in the development debate. Each of these ways of reasoning is the recursive product of the other in cycles of evolutionary learning. Hence there exists continuous and pervasive interaction, integration and evolutionary learning between the variables and the goals. Such a methodological result represents the unity of knowledge in the phenomenological model. It is applied, measured, and explained by the method of circular causation in the human potential index as wellbeing manifesting development sustainability.

Recently such a method of scaling and interpreting survey data was done by Bloom and Reenen (2010). They measured the differences found in inter-firm and inter-country economic performances, and associated this with differences in management practices. Their empirical measurement technique is based on scaling of survey results to prove this fact. Scaling for rank-assignment of relationship between population and economic growth by circular causation method was done by Choudhury, Hossain and Hossain (2011). Maurer (1999) wrote on a similar notion of organizing order out of complexity and of the inevitability of causality in a heavily stochastic nature of organic system: "... regularities in biological systems arise through a statistical process of causality."

The moral-social embedding of the wellbeing criterion has been formalized by Sen (1990) in

<sup>1</sup> Qur'an (14:24-27).

the deontological framework. Sen writes against the transitive axiom of rational choice and invokes moral judgment. The ethical deontological consideration in moral choice is preferred to the utilitarian instrumental rationality in Sen's (op cit p. 78) discussion of the wellbeing criterion in the following words: "I have tried to argue that the distancing of economics from ethics has impoverished welfare economics, and also weakened the basis of a good deal of descriptive and predictive economics."

The extension of the utilitarian postulate of economic rationality and its implication on optimal social choice is both over the set of goods/services and utilities. For if the welfare function comprises the map of individual utility functions, each and all of which are optimized by the agents and society at large, then in utilitarianism the welfare is independently established on individual utility functions. This is a logical result. But it remains devoid of any substantive meaning in collective choice and interaction that make up society.

This paper has extended the arguments of the impressive writings in the direction of establishing wellbeing as an epistemological concept that combines the deductive and inductive reasoning, the normative and positive reasoning, and the *a priori* with the *a posteriori*, contra Kantian phenomenology (Seidel, 1986). The same is true of a methodological proof of Popper's idea of demarcation in his separation of the deductive from the inductive (Popper, 2004 reprint; Blaug, 1993). The conceptual precept is combined with the empirical part in the result on non-demarcation nature of unified reasoning combining deductive with inductive, normative with positive. Such a unification of reasoning is conveyed by the system of relations (8)-(12).

Consequently, as a result of such methodological unification in the human potential-centered development paradigm (expression (7)) the inherent evolutionary learning processes arising out of the properties of interaction and integration between target variables and their relations (i.e.  $(\theta, x(\theta)), f(h((\theta, x(\theta))))$ ), and which are continuously pervasive across continuums of development stages establish unbroken endogenous relations between the state-variables and the ethical, policy and institutional variables. Thereby, all variables in the expression (7), further detailed in the remaining expressions, are endogenous in nature. The only exogenous premise in the entire system of circular causation relations is the episteme of unity of knowledge at the formal ontological level denoted by the primal governing premise,  $(\Omega, S)$ .

## PHILANTHROPY

Philanthropy as a charitable resource that is considered within the organized relationship of human resource for self-reliance and productivity in the development of human potential as we have explained it in the context of human potential. Philanthropy thereby becomes a pooled financial and productive resource bundle that may be invoked at the level of the individual or group donor. But its social implications and effectiveness in the uplift of human potential are gained by the organization of such resource at the collective social level. The organizer may be the national government (e.g., development expenditure), the non-governmental level (e.g. non-governmental organizations), the integrated community level (e.g. pooled charity network), and the international organizations (e.g., international development finance for philanthropy).

Charity now assumes a productive and

human resource development perspective. Its directions being productive and ethical development according to the development of human potential in target groups, philanthropy together with its relationship with the evolutionary learning process becomes a target of sustainable development planning. This is true particularly in the micro-entrepreneurship that aggregates complementary effects in a dynamic unified way to the social whole.

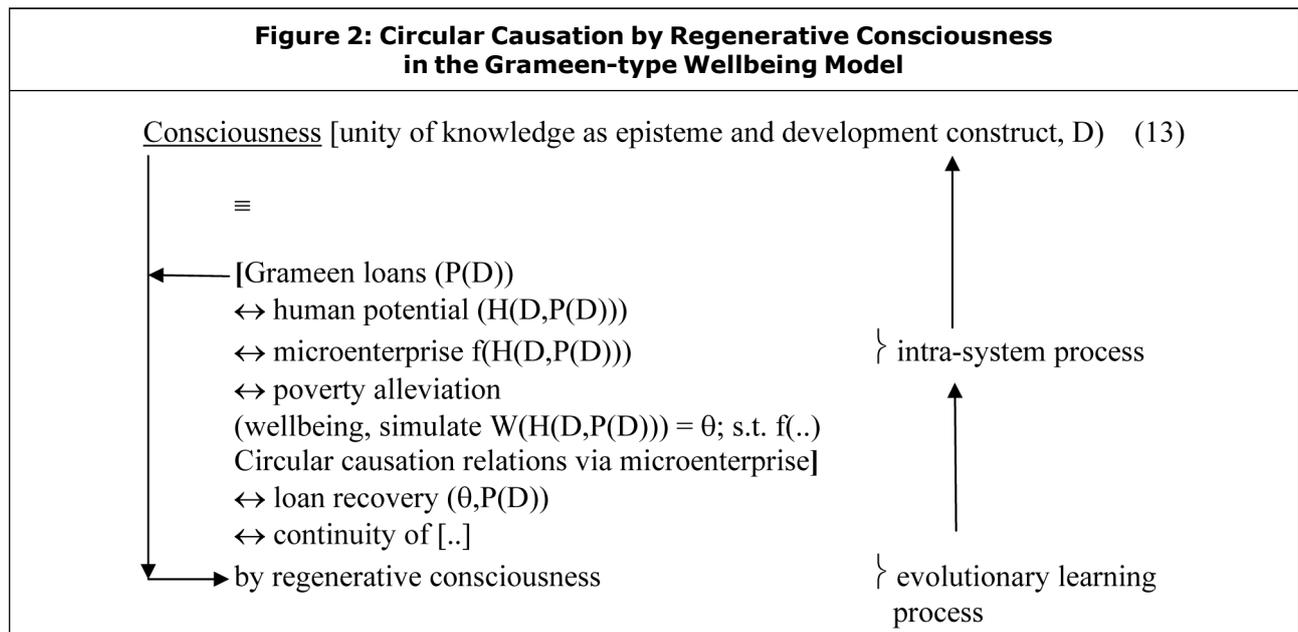
When philanthropy is included as an endogenous variable in the sense of organized charity that plays its catalytic role in human potential role in development (i.e., expression (7)), it becomes a variable in the vector  $\{x(\theta)\}$ . The variable representing philanthropy is thereby subjected to circular causation in the system of relations (8)-(12). Thereby, in the stages of 'estimation' followed by 'simulation' of the circular causation relations with philanthropy, we infer that organized charity is represented by social aggregation that is realized by means of societal, institutional, and policy effects in developing human potential by way of productive and conscious transformation of the labor force.

The concept of consciousness used here is that of realizing the unification, which is complementarities and participation between philanthropy as social obligations, and its productive use in regenerating the momentum of unification. Unification by sustainability is exhibited by the basic-needs regime of development. This signifies development along the path of the good things of life.

Examples of the productive use of philanthropy and its regeneration by the social system to sustain the (philanthropy-human potential-wellbeing) interrelations are of the micro-

enterprise (e.g., Grameen Bank) and the micro-entrepreneurial development through strategic interaction with large corporation (Choudhury and Harahap, 2009). The Grameen as a non-governmental development-oriented bank uses small loans to the village destitute to establish cooperative microenterprises with the objective of reducing poverty. By way of this objective, the Grameen has now become a social bank with the goal of achieving productivity in the poor village-based recipients of small loans. Thereby, microenterprises based on cooperative ventures are promoted with small loans and a high recovery rate of loans. A trust is thereby established of the circular regenerative flow of human resources of the type we refer to here as Philanthropy:

The system of circular relations based on the episteme of unity of knowledge (system (7)-(12)) is fully encapsulated in Figure 2. Loan recovery (i.e. voluntary loan payment by the borrower) is the start of the recursive relations that regenerates the conscious process of evolutionary learning in sustaining Grameen-type, [philanthropy — human potential – wellbeing] circular causation relations. Consciousness as the commencement and regeneration of the knowledge-induced process driven by the episteme of unity of knowledge is sustained by the endogenous evolutionary learning process of unity of organic relations between [human potential – philanthropy – wellbeing]. Establishing and sustaining this kind of unified endogenous interrelationship requires *functional* ontology to formalize the relations and then to 'estimate' and 'simulate' the empirical results of circular causation by the empirical inference formed by the functional ontology towards sustaining the unified interrelations. This is signified by complementarities, participation and continuity in the basic-needs regime of



development [micro-entrepreneurial development denoted by  $f(H(P(D(\theta))))$ ] as the good things of life (Streeten, 1981).

**Philanthropy Dynamics in Grameen Bank (P(D))**

By reference to expression (7)

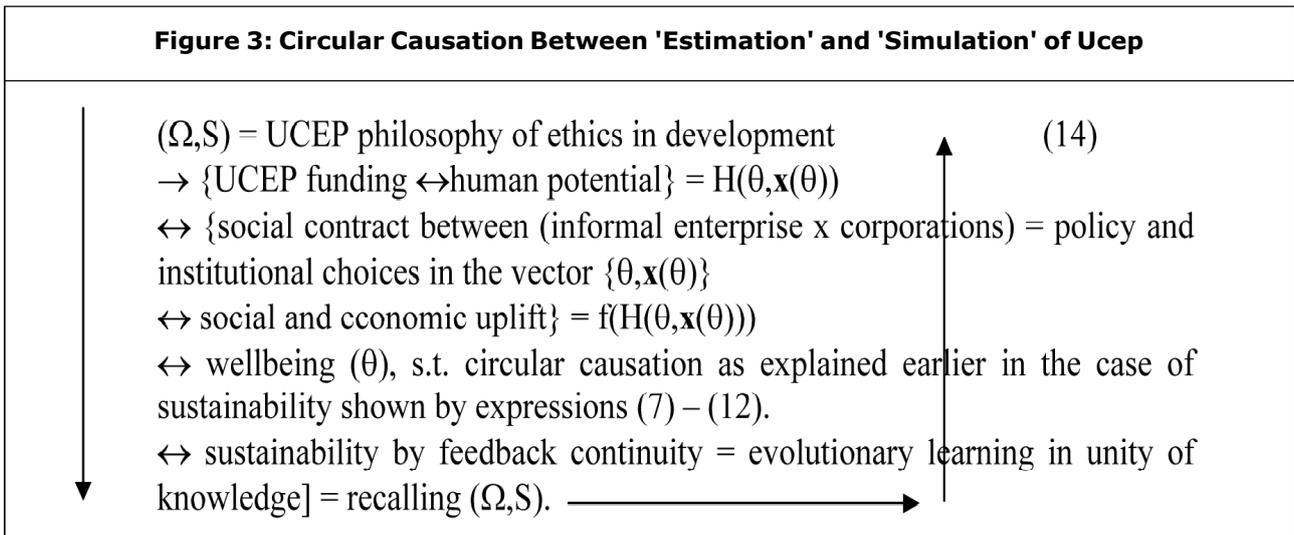
**Philanthropy-Dynamics in the Cooperative Arrangement Between Microenterprise and Corporation**

In many Muslim countries the emerging Islamic banks promote microenterprises by joint venture financing of small operations with corporations. An example of such a project is the Underprivileged Children Educational Program (UCEP) in Bangladesh. UCEP is funded by foreign donors, whereby panhandling children are taken off the street and put in fast-track vocational training programs combining basic education. The trained students of UCEP are then employed, and further trained on-the-job by corporations in Bangladesh. This form of the marginal labor force that can be vocationally trained for hands-on jobs in corporations has been preferred. The marginal

labor force is not unionized. This favors the corporation to carry on their productive activity uninterrupted and at low labor cost.

Figure 3 explains that like the case of Grameen philanthropy in human potential and sustainable development, UCEP’s foreign training donations can be viewed as philanthropy for developing human potential in the otherwise ignored destitute population. The advancement of the trained labor force over stages in corporations, and the trust on such marginalized labor force that are progressively trained in placement corporations, forms the functional circular causation relationship between the grassroots and the progressive levels of development of human potential between the informal enterprise and corporations. The resulting trust as human value in the workplace, the productivity gains, empowerment, entitlement, income generation, and human potential, altogether form the recursive forces for regenerating the conscious sustainability. The unity of the entire regenerative system is established by such recursively regenerative circular causation relations.

**Figure 3: Circular Causation Between 'Estimation' and 'Simulation' of Ucep**



**Unifying Philanthropy with Human Potential in the Wellbeing Human Development Index**

In the definition of sustainable development by expression (7) the critical interactive, integrative, and evolutionary interrelationship of regenerative circular causation is identified between (i) the epistemic origin of unity of knowledge, functionally denoted by  $\{\theta\} \in (\Omega, S)$ , (ii) its unifying influence on the world-system under study. This is human potential  $h(.)$  in its complementary relations to the state, policy, institutional, and behavioral variables  $\{x(\theta)\}$ . This includes in it philanthropy in terms of the other stated types of variables. The result of the circular causation denoted by  $f\{\theta, x(\theta)\}$  and  $h(\theta, x(\theta))$  is the consequence on evolutionary learning denoted by evolutionary (evol) values of wellbeing proxied by  $\{\theta\}_{evol}$ -values along the evolutionary learning path. Such evolutionary values in new emergent paths arising from the previous ones are determined by recalling of the epistemic core,  $\{\theta\}_{evol} \in (\Omega, S)$ , etc.

By the implicit function theorem applied to  $h^* = h(\theta, x(\theta))$  (.) we can write for wellbeing index,

$$\{\theta\}_{evol} \in (\Omega, S) = H\{x(\theta)\}_{evol} \dots(15)$$

Subject to circular causation between the  $\{x(\theta)\}$ -variables

Expression (15) is subjected to 'estimation' and 'simulation' by means of predictor values, as explained earlier.

We now combine the interactive, integrative, and evolutionary learning by embedding of human potential with philanthropy and wellbeing in the sustainable development context. The result is derivation of the following general-system model of epistemic unity of knowledge and evolutionary learning in the Mind-Matter relational context in reference to the functional ontology (epistemologically endowed formalism) (Gruber, 1993):

In conclusion to this section we note that philanthropy in the development debate is not to be treated as a *hand-out* of charity. For the developmental effects of philanthropy, as in the case of enhancing human potential and wellbeing, which is a participatory concept of learning and unity of knowledge, it must be a productive and social factor. The general-system model of unity of knowledge, now applied to the specific case of philanthropy-human potential-wellbeing synergy

of organic relationship now becomes an application in sustainable development.

## REVIEW OF THE LITERATURE ON EVOLUTIONARY ECONOMIC DYNAMICS

### Introducing the Comparative and Contrasting Views

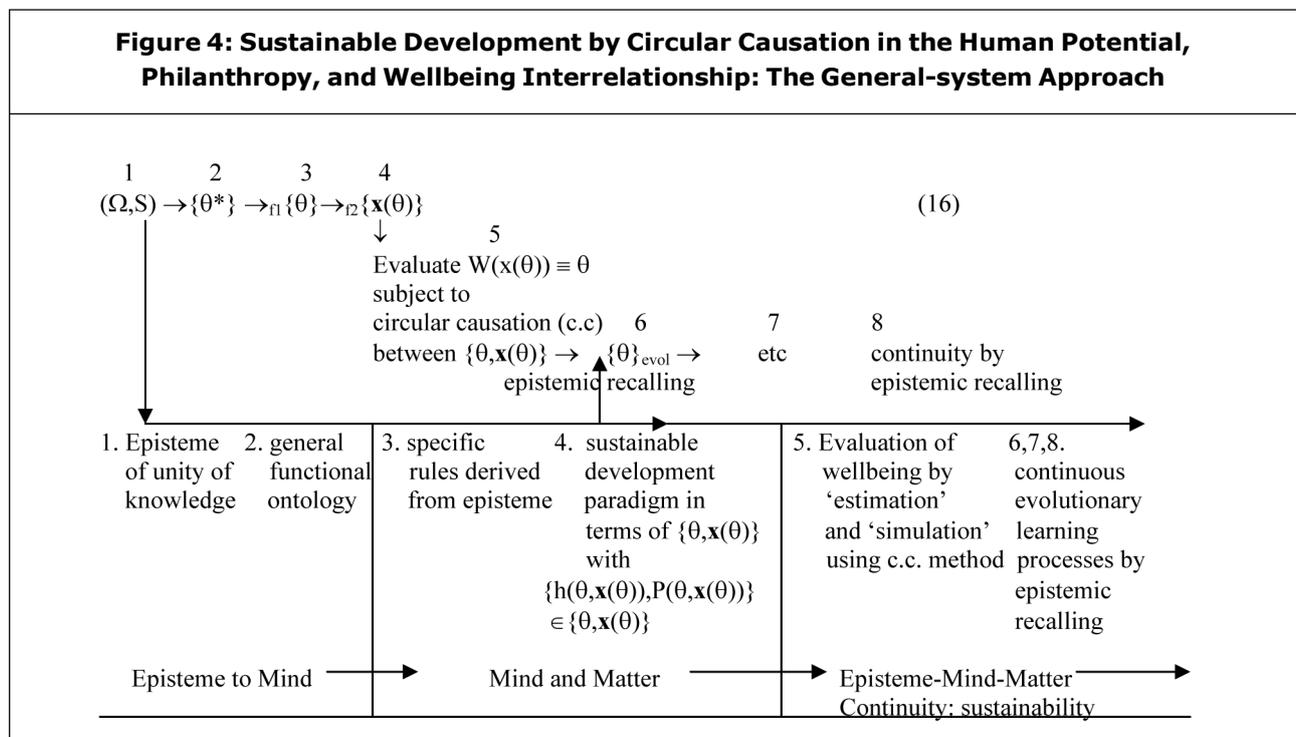
The evolutionary learning methodology used in this paper is akin in its explanation but not in analytics to the ideas of Myrdal (1958), and to Schumpeterian economic growth and development presented by Cantner, Gaffard and Nesta (2009). In sociology of knowledge it is similar to the dialectical thesis presented by Sztompka (*op cit*) and a Marxist methodology reproduced by Resnick and Wolff (*op cit*). We will review these works in the light of the evolutionary methodology presented in this paper.

The substantive difference between the methodology of this paper and of the rest

mentioned here is the great epistemic divide of unity of knowledge. But to quote Hawking (1988) on this matter of unity of the scientific worldview, the essential nature of the unitary episteme in everything (Barrow, 1991) remains the core of the new scientific episteme. Such assertion centering on unity of knowledge and its construction of the unitary knowledge-induced world-system projects the epistemological nature of scientific revolution. We need to appreciate this viewpoint, for although it arises from the natural sciences, it carries on the relevance in the social sciences as well, keeping in view the intra- and inter-systemic unity made possible in the general-system depicted in Figure 4.

### Hawking (1988) Writes in Terms of the Unitary Scientific Project

“The eventual goal of science is to provide a single theory that describes the whole universe. However, the approach most scientists actually follow is to separate the problem into two parts.



First, there are the laws that will tell us how the universe changes with time..... Second, there is the question of the initial state of the universe. Some people feel that science should be concerned with only the first part; they regard the question of the initial situation as a matter for metaphysics or religion. They would say that God, being omnipotent, could have started the universe off any way he wanted. That may be so, but in that case he also could have made it develop in a completely arbitrary way. Yet it appears that he chose to make it evolve in a very regular way according to certain laws. It therefore seems equally reasonable to suppose that there are also laws governing the initial state.”

### **Barrow (1991) Writes About the Unitary Law of ‘Everything’ (Slightly Edited)**

“The current breed of candidates of the title of a ‘Theory of Everything’ hopes to provide an encapsulation of all the laws of nature into a simple and single representation. The fact that such unification is even sought, tells us something important about our expectations regarding the Universe. These we must have derived from an amalgam of our previous experience of the world and our inherited religious beliefs about its ultimate Nature and significance. Our mono-theistic traditions reinforce the assumption that the Universe is at root a unity that is not governed by different legislation in different places neither the residue of some clash of Titans wrestling to impose their arbitrary wills upon the Nature of things, nor the compromise of some cosmic committee.”

### **Gunnar Myrdal and Evolutionary Economic Worldview**

A great deal of similarity between Myrdal’s (1968) idea of ‘the wider field of valuation’ in development

theory and our formulation of the wellbeing criterion exists. The moral and social spectrum of valuation in the development worldview led Myrdal to become utterly dismayed with neoclassical economic theory. He attached the utilitarian foundation of welfare economics and suggested academic change in this regard. Myrdal (1987) wrote in this regard:

“Hundreds of books and articles are produced every year on “welfare economics”, reasoning in terms of individual or social ‘utility’ or some substitute of that term. But if the approach is not entirely meaningless, it has a meaning only in terms of a forlorn hedonistic psychology, and a utilitarian moral philosophy built upon that psychology. I have always wondered why the psychologists and philosophers have left the economists alone and undisturbed in their futile exercise.”

Likewise, there is the profound commonness in the concept of circular causation between our and Myrdal’s methods, further carried over by Streeten (1958), Kaldor (1975), Toner (1999) and others. On this point Toner (1999, p. 124) writes importantly to bring out the distinction between mainstream economic theory, principally neoclassical economics, and the theory of circular causation. The latter endogenously integrates economic and non-economic elements of a comprehensive understanding of economic theory for studying total wellbeing: “The notion of complementarity in production and consumption is central to CC (circular causation in the process of cumulative causation) theory. For Kaldor, given his concern with growth and dynamics as opposed to the allocation of fixed resources, complementarity in production and consumption is far more pervasive and significant than the neoclassical principle of substitution.” The same

kind of strong circular causation between economic and non-economic complementarities is vouched by Kaldor (*op cit*).

### **Joseph Schumpeter on Evolutionary Economics a la Austrian Economic Legacy**

Schumpeter like Myrdal and Boulding (1981) in the literature on evolutionary economics modeled the development paradigm as a dialectical process in creative destruction. The states of economic change were not to be found in equilibrium. Rather, disequilibrium and its cumulative deepening were seen as the perpetual design of change. This can be seen in the Schumpeterian argument of technology in development. The most important form of technology-like factor is human potential. How can we treat this idea in the combined anticipated effects of Schumpeter and Myrdal's theories of evolutionary economic dynamics relating to development?

Gafford (2009) refers to Schumpeter's disequilibrium approach in such a case with technology-like effects, which we take as human potential: "As shown with the model used by means of numerical simulations, the introduction of the new technology generates an initial fluctuation, which brings about temporary unemployment as well as a temporary fall in productivity. However, this fluctuation very soon dampens down and the economy converges to a new steady-state corresponding to the superior technology, with a higher level of productivity—which allows lower prices and higher real wages—and full employment". But if such temporary disequilibrium effects as in the case of human potential to bring in new ideas remains in abeyance, Myrdal's circular causation will

cause multiplying and deepening of the temporary perturbations into large proportions. An example is the flare of inflation, which as Winston Churchill remarked, is like pregnancy; it runs its course. Myrdal's cumulative causation also has such 'butterfly effects' to multiply the small and temporary disturbance a la Schumpeter into large consequences.

The evolutionary learning approach while being dialectical agrees with the dynamic process implied in Schumpeter and Myrdal's development approaches. Yet, it is not a normative disequilibrium model. Instead, the epistemic model of evolutionary learning in unity of knowledge at large is an evolutionary equilibrium model of creative evolution carrying the past into the ever-new future continuously and across systems. Here then is a critical difference despite methodical similarities in the approaches of all these contending general-system models of sustainable development. We have defined this in accordance with the continuous synergy between human potential, philanthropy, and wellbeing.

### **Dialectical Model and Evolutionary Learning Model of Unity of Knowledge**

Sztompka (*op cit*) and Resnick and Wolff (*op cit*) formalize their similar dialectical models of circular causation that agrees methodically with our evolutionary learning model. Yet methodologically the two sets of models remain apart. The difference lies solely on the nature of the epistemic source of knowledge affecting the Mind-Matter interrelationship in respect of the development problem. In dialectical reasoning of the rationalist authors Mind-Matter starts from and ends in the rationalist premise.<sup>4</sup> Consequently,

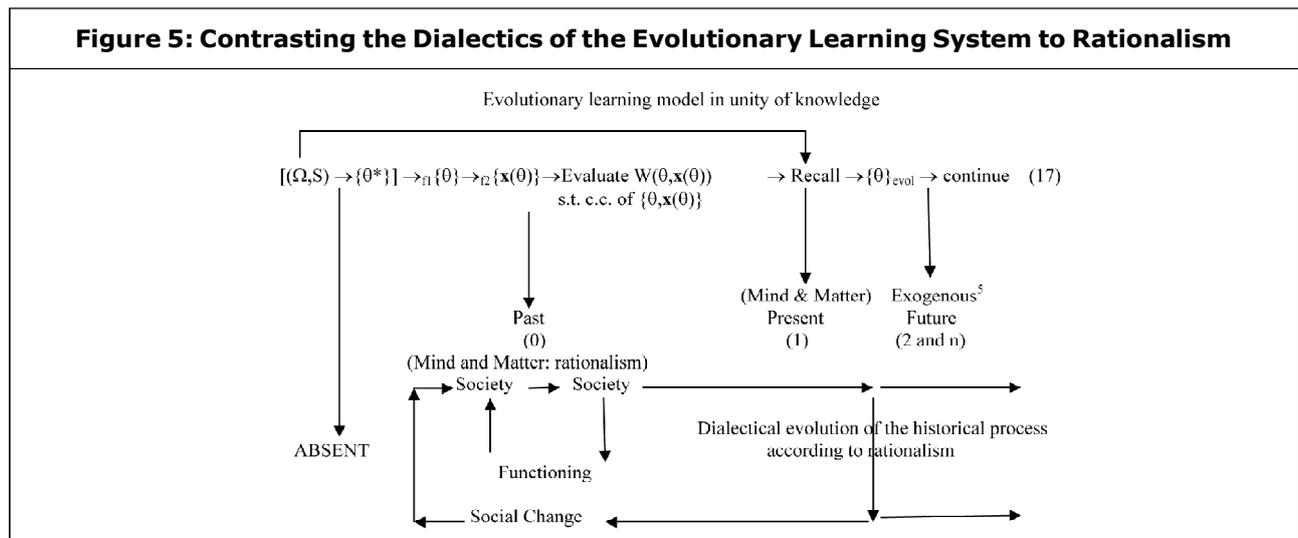
<sup>4</sup> Sztompka writes (*op cit*, p. 115): "Therefore we cannot but seek the ultimate, primary mover of society in their traits and properties – in brief, in human nature." In this paper we have equated the claim of human nature with rationalism as a dialectical philosophy.

when this epistemological premise is brought into the development of economic theory, the issues of transitivity and economic rationality enters. The consequence of such an old mainstream postulate, which Amartya Sen (1977) refers to as the domain of the ‘rational fool’, human potential becomes human capital. Thereby the neoclassical postulates of optimality, steady-state equilibrium, predictability, and permanence of economic rationality define individual, market, and social behavior.

In such cases, human potential ceases to be a continuous and pervasive evolutionary learning over the dimensions of knowledge, time, and space in which our epistemic model of evolutionary learning abides. If otherwise this possibility was allowed then two consequences will arise. Firstly, the existence of utility, welfare, and production functions is denied. No convex to the origin or well-defined surfaces of resource allocation between competing agents can exist. Secondly, predictability in the midst of simulacra of possible resource allocations is lost. Probability distribution of resource allocation is not acceptable as a way out of the unmeasured uncertainty that remains abound. See O’Donnell (1989) on Keynes’ epistemology.

The evolutionary learning dialectical model of development in respect of expression (7) and Figure 4 overcomes the mainstream indeterminateness of the development dynamics. This is realized by assigning ‘near’ spot-valuation of the uncertain events by reading the probabilities of occurrence of given contingent states with better accumulated stock of knowledge-flows. Such ‘near’ spot-valuation points are the nodes of the overlapping generation model for simulating allocation resources for attaining intertemporal wellbeing objective along the sustainable path of evolutionary learning. Prediction in such an overlapping generation model is thus attained by convergence under the evolutionary learning process. This is both an endogenous process of consciousness and is participative in nature in the model of participatory development. This is the epistemic consequence of unity of knowledge. Here human potential necessarily remains predominant.

Figure 5 shows the congruence in the domain of the Mind-Matter dialectical relationship between the rationalist doctrinaire and the episteme of unity of knowledge (Choudhury, 2009).



<sup>5</sup> Resnick and Wolfe referred to the continuous exogenous process as newly emergent dialectical processes from the previous ones or a plethora of such processes by competition between the entities. This is referred to as the Marxist problem of overdeterminism.

Amartya Sen (2010): Adaptation of the Paradigm of Commodities, Capabilities, and Wellbeing to Circular Causation Organic Relations of Epistemic Oneness

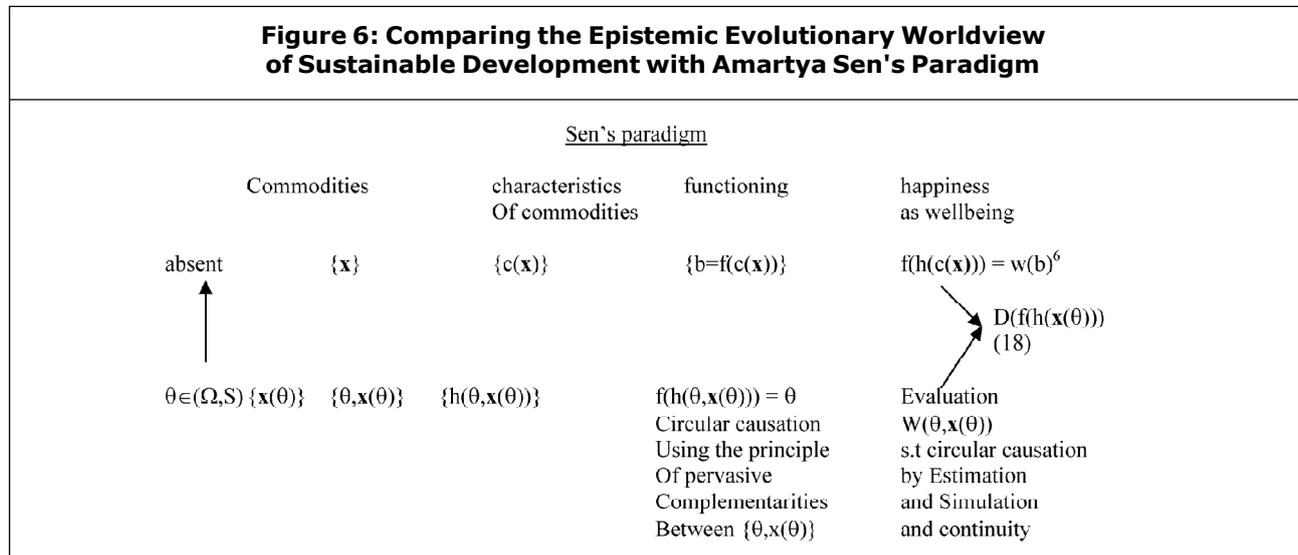
Here is a straightforward adaptation of Amartya Sen's paradigm to the evolutionary learning worldview of unity of knowledge explained by expression (7).

Sen formalizes his paradigm as follows. We have dropped the specification to individual 'i' in Sen's actual formulation; and replaced this with the social choice equivalence:

What is the path toward reaching  $D(\dots)$  from either side of the spectrum in expression (18)? In the absence of the epistemic premise there are no binding grounds for the interrelationships to exist between the commodity-variables and their various functional transformations. Consequently, Amartya Sen's paradigm can equally invoke utilitarian type aggregation of happiness, and this

is of the Benthamite form. Or, by Sen's arguments against utilitarianism the aggregation may be complex, but not ethical by way of unity of knowledge between the good things of life, that is in the life-sustaining paradigm of development. Consequently, the mix of needs and wants as acceptable choices are permitted in the sustainable development regime. Yet the consequence of individualism and independence of preferences in such social aggregations is not recognized.

In brief, Amartya Sen's claimed ethical social aggregation of individual preferences in his development paradigm is not epistemologically viable. It is simply an exogenously enforced state of preferences of a sheer analytical nature. Sustainable development cannot be the endogenous achievement of such end of learning otherwise attained by the moral reconstruction towards unity of the development worldview by the episteme of unity of knowledge<sup>7</sup> (Figure 6).



<sup>6</sup> Sen (op cit, p. 8) defines wellbeing: " 'Well-being', then, can plausibly be seen as an evaluation of this  $b_i$ , indicating the kind of being he or she is achieving". Besides, Wellbeing in such a sense also represents an evaluation of capabilities.

<sup>7</sup> Consider Sen's entitlement failure in his starvation set (1986). In order to restore optimal entitlement Sen argues that the interior point can be moved on to the welfare surface by means of endogenous (consciousness) and exogenous (Government development expenditure as policy). But because of this incongruent mix there can be two effects. Firstly, the endogenous and exogenous preferences will break apart. The exogenous preferences will yield a welfare function of the utilitarian type. The endogenous preferences will yield continuous perturbations of the welfare surface. In this case Sen has nothing to impart in respect of control and predictability. The second effect is that an interior point cannot be moved on to the welfare surface because of the perturbations caused between the exogenous and endogenous mix of preferences. Thereby, no optimal welfare surface will ever exist. On this issue Sen's starvation and entitlement failure methodology will never reach an optimal and predictive state.

### **Application of the Evolutionary Learning Paradigm of Endogenous Development: Canadian Natives**

Development paradigm centered on human potential with development expenditure as a case of philanthropy in the wellbeing function, provides a fresh policy perspective for Canadian Natives. Thus far in Canadian Native history, the framework of economic development has focused on the model of catching-up of the Aboriginal Peoples to the non-Aboriginal levels of education and training, reduction of unemployment rate to the non-Aboriginal level, and the potential for raising tax revenue from a fast growing population of Canadian Natives. The focus is thus on economic efficiency and productivity gains. This presents a neoclassical framework of development using the target of optimal human capital investment in economic growth.

Yet the recent history of Canadian Native labor force and population change reveals no significant gains. On this issue Mendelson (2004) writes: . Whereas fewer than one-third (31.3 percent) of all Canadians have less than high school graduation, almost one-half (48.8 percent) of the Aboriginal identity population did not graduate from high school. Only 9.9 percent of the Aboriginal identity population graduated from high school, as opposed to 14.1 percent of the population overall. About 12.1 percent of the Aboriginal identity population had a trades certificate or diploma, and another 12 percent graduated from a college. A mere 4 percent of the Aboriginal identity population had a university degree, as opposed to 15.4 percent of all Canadians. Only in trades certificates and diplomas is the Aboriginal identity population achieving better than the rate of course-completion among the total population.

In 2006, the employment rate of First Nations

people living on reserve was 51.9%. Those living off reserves recorded an employment rate of 66.3%. First Nations People living off reserve, but who were registered for Native Indian status recorded 71.4% employment rate. In 2006, on-reserve Native Indians had an employment rate of 51.9% compared with 50.0% in 2001. First Nations people living off reserve but without registered status had an employment rate of 64.0%. This was up from 58.2% in 2001.

The unemployment rate among First Nations people aged 25 to 54 living on reserve was 23.1%. By comparison, 12.3% of First Nations people living off reserve and 5.2% of non-Aboriginal people were unemployed. Among First Nations people living off reserve, unemployment rates for people with Registered Indian status was 13.7% in 2006 compared to 9.4% of people without Registered Indian status.

Projections between the years 2006 and 2026 under the assumption of Aboriginal People catching up with the educational levels of non-Aboriginal People in 2006 show the following trends: Labor force participation rate of Aboriginal People will change by rates between 9.50 per cent to -7.02 per cent according to the best and lowest projection scenarios, respectively. This compares with a percentage change of -9.59 for non-Aboriginal People for the same time period. Percentage change in employment for Aboriginal People to those for non-Aboriginal People between 2006 and 2026 will stand at  $347206/1225071 = 28.34$  per cent; or  $155857/1225071 = 12.73$  per cent on the basis of best or worst scenario of projection, respectively. Contribution to productivity in the best scenario of projection by 2026 is expected to be between 0.007 per cent and 0.014 per cent in 2026. Additional growth contribution to output is expected to be 0.015 per

cent of GDP. Additional employment growth would be between 0.008 and 0.016 per cent by 2026. See Gionet (2009).

### **Inference from the Canadian Native Statistics**

The above projections point out that the model of human capital development relating to an expected positive correlation between education, employment, labor force participation, and income generation is an efficiency approach that overlooks the importance of labor market adjustment issue by way of adopting empowerment and cultural sensitivity to work. Canadian Natives would rarely gain even with massive expenditure, as philanthropy by the Canadian Government. On the other hand, human potential with national development expenditure to generate endogenously progressive labor force adaptation requires involvement of Canadian Natives in their own culture of development, yet within the Canadian national perspective (Battiste, 2002).

Indeed, even though the unemployment rates of Canadian Natives remain very high, yet the increasing population size and the resulting increasing labor participation rate require labor market adaptation. This can be realized by the cultural sensitivity of the Canadian Natives in the Canadian national perspective of Aboriginal development paradigm that, we have presented in this paper. The objective is to integrate together the goals of human potential, philanthropy, and wellbeing.

### **CONCLUSION**

This paper has contributed a new paradigm of participatory development in the context of a general-system model of evolutionary learning. This development worldview involves a specific phenomenological model of epistemic unity of

knowledge. We constructed the model in the generalized case and particularized it to the case of human potential as a goal of participatory development. In the phenomenological model, philanthropy is treated as productive resource. Wellbeing is the ultimate evaluative criterion. It conceptualizes and measures the epistemic criterion of organic unity between human potential, philanthropy and the gambit of other variables that either complement or show differentiation between them. The latter kind of relationship needs ethical reconstruction as the normative perspective in simulation.

Following the formalism of the general theory of sustainability in the context of the immanent evolutionary learning model that arises, the applied case of Canadian Native wellbeing in such a model was addressed. A wider range of data could extend the empirical exercise to a policy-theoretic study of Canadian Natives wellbeing using the circular causation method, which we treated in this paper.

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