

WHICH OF THE TWO? KNOWLEDGE OR TIME

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Abstract

Knowledge versus Time, Truth versus Falsehood, Unity versus Dualism, these and the like are the subjects for philosophical discourse in the light of the two contrasting worldviews of unity of knowledge versus rationalism. The emerging formalism also leads to practical considerations in the circular causation model of unity of knowledge. The Qur'an is invoked in this formalism to build the arguments and the analysis underlying the analysis. Conception of time in the recursive causality, time seen as the recorder of particular states of the knowledge flows and of the knowledge-induced forms focusing on knowledge and time, the Qur'an brings out the contrast between these two entities in constructing a frame work of reality. Human conception of time as a temporal flow is replaced by the conception of transcendental time as equivalent to the divine knowledge. Time is therefore an endogenous event that is simultaneously determined by knowledge flows within the content recursion between values. Two sides of expression are therefore consistent with each other. The paper discussed two types of distinct aggregation in two kinds of realities, namely, unity of knowledge and methodological independence. In the light of the recursive circular causation model of endogenously complementary interrelationships that emanate from the epistemological model of unity; here considered a developed social wellbeing functioning according to the variables like, Human Development Index(HDI), Human Poverty Index (HPI), Gross Domestic Product(GDP) and Gender Development Index(GDI). The contrast between two worldviews is thus shown by the pervasively unifying nature of the principle of complementariness across diversity of complementing entities versus the competing and rationalistic nature of methodological individualism and independence.

We make a contrast between opposing precepts of knowledge versus time; unity of knowledge versus pluralism emanating from rationalism. We then pose the question, which of the two opposing categories truly constitutes total reality in explaining epiphenomena. The concept of epiphenomenon is meant in the sense of Husserl (trans. Lauer, 1965) as the merging together of Kant's noumena with phenomena, thereby constituting an integrative and inseparable precept of reality. Such an attribute of unity of knowledge and its influence on the experiential

world is our definition of reality. In the context of this meaning of epiphenomenon, if God is explainable in the concrescent human agency, then He is the true reality (Whitehead trans. Griffin & Sherburne, 1978), although we do not perceive God. Likewise, if the divine law is the indispensable foundation of any and all episteme then it becomes a universal (Foucault, trans. Dreyfus & Rabinow, 1983). In regards to such implications writes Palan (2000, p. 218): "..... certain social categories, such as the 'nation' the 'people', 'God', which are admittedly hypothetical entities in the sense that no one has seen them, are matters of faith rather than fact. And yet, it is impossible to deny that such hypothetical entities shape our social world to a considerable extent".

Focusing on knowledge and time, the Qur'an brings out the contrast between these two entities in constructing the framework of reality. The divine knowledge and the law are set primal in reality. (Qur'an 6:59). In contrast, the human conception of time as a temporal flow is replaced by the conception of transcendental time as equivalent to the divine knowledge. Its impact on world-systems existed even before man was a recorded entity. (Qur'an 76:1). But this universal attribute is not shared by the temporal time flow. Besides, the human dependence on time as a primal and singular deterministic factor is equated with ignorance (Qur'an 45:24).

Objective

The objective of this paper is to attempt an answer to the following question: which of the two-knowledge or time-explains the dynamic processes of world-systems in which the human agency reasons, cognizes and constructs inferences from?

We will proffer the answer to this question by investigating the two functional relations given below. From them we will deduce which one of the two representations constitutes the foundation of true reality. Note that we mean by true reality that reality which supersedes in the universal explanatory wholeness. Apart from the precept of the true reality, both truth and falsehood form opposite realities in universal explanations.

Initial Questions to Consider

We pose the question. Is the true reality represented by the relation, $t=F(\theta \in \Omega)$? Here t denotes the flow of time θ denotes the flow of knowledge as unity derived from the epistemic foundation, Ω ; F is an explainable function denoting an explanation of specific problems within the domain of epiphenomena. Or is the true reality represented by $\theta \in \Omega H(t)$? H denotes a functional relation explaining a construct of the same reality within the epiphenomena. Other questions pertaining to these fundamental ones are the following: Can the two functions be recursively embedded in the context of experience? If so, then in what ways do these recursive relations explain reality in terms of the concrescent

epiphenomena? The latter is the ontological question of 'be-ing'. It rests on the merging of the epistemic with the evidential. Imam Ghazzali (trans. Marmura, 1997, p. 158) remarked on this continuity in the unity of knowledge in the following words: "In brief, every event has a temporal cause, until the chain of causes terminates with the eternal celestial motion, where each part is a cause for another. Hence, the causes and effects in their chain terminate with the particular celestial motions. Thus, that which has a representation of the movements has a representation of their consequences and the consequences of their consequences to the end of the chain".

Analyzing the Questions

In the context of economic theory, Shackle (1972) investigated such a question of primacy of episteme as novelty caused by continuous learning. His emphasis on knowledge instead of time as the ultimate determiner of events can be noted by his criticism of the neoclassical economic objectives of optimization and general steady-state equilibrium as opposed to the method of innovation and learning. Shackle argues that novelty, as the attribute of social dynamics, ends where optimization and steady-state equilibrium are assumed, as opposed to whether they exist. Shackle (op. cit, p. 97) writes: "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 infinity of solutions. In either case, there is no prescription of conduct".

Knowledge as Process

Likewise, Choudhury and Korvin (2002) have argued that the time-dynamic solution of the optimal control theorem breaks down in the context of treating the following tuple, $\{\theta, X(\theta)\}$ across overarching and evolutionary domains denoted by $\{\cdot\}$, with $\theta = \lim_{i,j,k \dots} \{\theta_{i,j,k} \dots\} \in \Omega$ i denoting interaction; j denoting variables, k denoting systems, etc. Ω is treated as a 'complete' topology (Maddox, 1970) in the large-scale universe, which is denoted by the open domain extension of fixed point mapping, $\Omega \rightarrow \Omega$ (Choudhury, 1995; Nikaido, 1989). $X(\theta)$ is a vector of socio-scientific and instrumental variables and their relations. While $X(\theta)$ is defined over complex spaces of $i,j,k \dots$. Yet in the limiting case it is a convergent function of $\theta = \lim_{i,j,k \dots} \{\theta_{i,j,k} \dots\} \in \Omega$. This mapping is the cumulative result of all interactively integrated and evolutionary relations of the type $\bigcup_i \bigcup_{j,k \dots} f_{i,j,k} \dots (\{\theta, X(\theta)\})$. While each of the component $f_{i,j,k} \dots (\{\theta, X(\theta)\}) \in [\Omega \rightarrow \Omega]$ has a finite cardinality, $\bigcup_i \bigcup_{j,k \dots} f_{i,j,k} \dots (\{\theta, X(\theta)\}) \subseteq \Omega$ is said to have super-cardinality rather than an infinite cardinality (Choudhury, 2002). This is for the reason that being a topology, it must necessarily establish the relations that remain well defined by each and all of $f_{i,j,k} \dots (\{\theta, X(\theta)\}) \in [\Omega \rightarrow \Omega]$. This characteristic of the relational order could not be obtained in infinite cardinal structures (trans. Bauer-Mangelburg, 1967).

It now needs to be proved which of the following cases is the fundamental one from which the remaining ones and itself can be derived and explained as a functional structure to make the emerging methodology and results applicable to an expanding class of problems of world-systems. The three cases are formally configured as follows:

- | | | | |
|----|--|---------------------------------|--|
| 1. | t
$\downarrow$
$X(t)$
Does not lead to time flow, say $t' > t$. That is t is exogenously related to $X(t)$ | $\rightarrow H$
$\downarrow$ | $\theta: \theta = H(t)$
$\downarrow$
$X(\theta)$
can lead to knowledge flow, say θ' in monotonic value greater, equal to or less than. θ . Thus θ and $X(\theta)$ are recursive and endogenously interrelated
Thus we generate $\{\theta', X'(\theta')\}$ recursively and endogenously. |
|----|--|---------------------------------|--|

If expression (1) was to be true then we would have,

$$t \rightarrow H_1 \theta : \theta = H_1(t); \text{ and independently, } t \rightarrow H_2 X(\theta): X(\theta) = H_2(t).$$

But since θ and $X(\theta)$ are interrelated, t would have to be solved as a dependent variable between H_1 and H_2 to establish the relationship between and $X(\theta)$. Hence a contradiction arises between the same t -value being once an independent variable and then again a dependent variable without a process between this recursion. Thus the representations H_1 and H_2 are not valid in expression (1).

Next we consider the reverse order:

- | | | | |
|----|--|---------------------------------|--|
| 2. | $\theta \in \Omega$
$\downarrow$
$X(\theta)$
Can lead to θ -flow, say θ' recursively related to θ .
Therefore,
$\downarrow$
θ'
$\downarrow$
$X'(\theta')$
$\downarrow$
etc. as continuous endogenous recursion | $\rightarrow H$
$\downarrow$ | $t: t = F(\theta)$
$\downarrow$
$X(\theta)$
Since t is of the category of $X(\theta)$, we can
define,
$t = F_1(\theta)$, which
$\downarrow$
θ'
$\downarrow$
$t' = F_2(\theta')$
$\downarrow$
Thus we generate $\{\theta', t'(\theta')\}$ recursively and endogenously. |
|----|--|---------------------------------|--|

Time is therefore, an endogenous event that is simultaneously determined by knowledge flows within the context of recursion between θ and $X(\theta)$ values. The two sides of expression (2) are therefore consistent with each other.

Since t is a member of $X(\theta)$ vector, the elements of which are also interrelated by endogenous recursion, therefore, t is also endogenously recursive with such elements of the vector as also with θ -values. Hence in this continuously recursive sense the following causality shown by two directional arrows in Figure 1 is true:

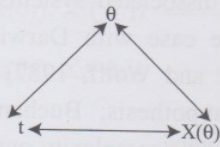


Figure 1: Causality in the Knowledge-Induced Domain

Figure 1: Causality in the Knowledge-Induced Domain

Time Conception

What grounds the conception of time in the recursive causality as shown? Time is seen as the recorder of particular states of the knowledge flows and of the knowledge-induced forms. The vector, $\{\theta, t, X(\theta)\}$ as shown Figure 1 then recursively determines the time-flow as an entity. Such a recursive relationship may be linear, in which case θ and t have the same trend and $X(\theta)$ is simultaneously recorded by the co-existing time flow. Otherwise too, in the case of non-linearity between time and knowledge flows the above mentioned causality of Figure 1 becomes complex. Examples of such time concepts are relativistic and quantum time (Hawking, 1988) and the arrow of time (Prigogine, 1955).

The *Qur'an* refers to both of these kinds of times inseparably with knowledge values as created entities emanating from the divine roots of Ω , the perfectly unified worldview of the divine laws. (*Qur'an*, 103; *Qur'an*, 76:1).⁷⁵ In the inspired saying of the Prophet Muhammad Allah equates Himself with Time (Sahih Bukhari).⁷⁶ But since Allah is the perfection of all knowledge, therefore only at this primordial level are time and knowledge synonymous. No process is possible at this level of the divine perfection. However, since $\theta \in \Omega$ is an incomplete knowledge flow though it carries with it the essence of unity by complementarities between the diverse things, which is the *Qur'anic* principle of creation in pairs,⁷⁷ therefore the relations between time and such knowledge flows and their induced variables remain complex (Choudhury, 2003).

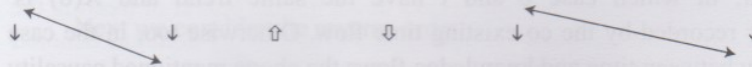
Another Possibility for Knowledge Time Relationship

Next we examine the third possibility of the time-knowledge relationship. The following question needs attention: Can the epistemology of unity of knowledge be premised on any other than the divinely unified most perfect 'super-cardinal' domain of knowledge, Ω ? If not, then what is the nature of the emanating relational orders that spring from the domain of rationalism and pluralism signified by the time and knowledge domain being premised on individuated Ω s, for $s=1,2,\dots$? Competing and dissociated systems with their own independent episteme emerge. This is the case with Darwin's (1936) natural selection evolutionism; Marx's Resnick and Wolff, (1987) over-determination problem; Popper's (1988) refutation hypothesis; Buchanan's (1971) methodological individualism; Wallerstein's (1998) complexity out of chaos, etc. The evaluation of the pluralism of Ω s, for $s=1,2,\dots$ is still done by the exogenous criterion of unity of knowledge Ω against the rationalistic pluralism of knowledge domains.

Some Contrasting Structures Relating to Knowledge and Time

Expression (1) shows that if Ω is not the epistemological premise than t and θ are disjoint categories. Consequently, the following relations will yield the results as shown, which is contradictory in respect to determining the causality as shown by $\leftrightarrow$, Inter-systemic causality and relationship is denoted by $\updownarrow$.

$t_1 \rightarrow H_1 \theta_1 : \theta_1 = H_1(t_1)$; and independently, $t_1 \rightarrow H_2 X_1(\theta_1) : X(\theta_1) = H_2(t_1)$.



$t_2 \rightarrow H_1 \theta_2 : \theta_2 = H_1(t_2)$; and independently, $t_2 \rightarrow H_2 X_2(2) : X(\theta_2) = H_2(t_2)$.

Yet the above causality is true in the case of the knowledge-centered recursive methodology only, with processes of complementary relations being determined by the law of unity of knowledge governing $\{\theta, t, X(\theta)\}$.

Corresponding to expression (1) vectors such as $\{t, \theta(t), X(t)\}$ will move along independent time-dependent relations. Each of these relations will be premised on independent Ω s, for $s=1, 2, \dots$ is evaluated by Ω .

We delineate this bifurcation process of methodological independence between sequences as follows and refer to it as the intra-systemic endogenous property of independently distributed systems (Choudhury, 2000).

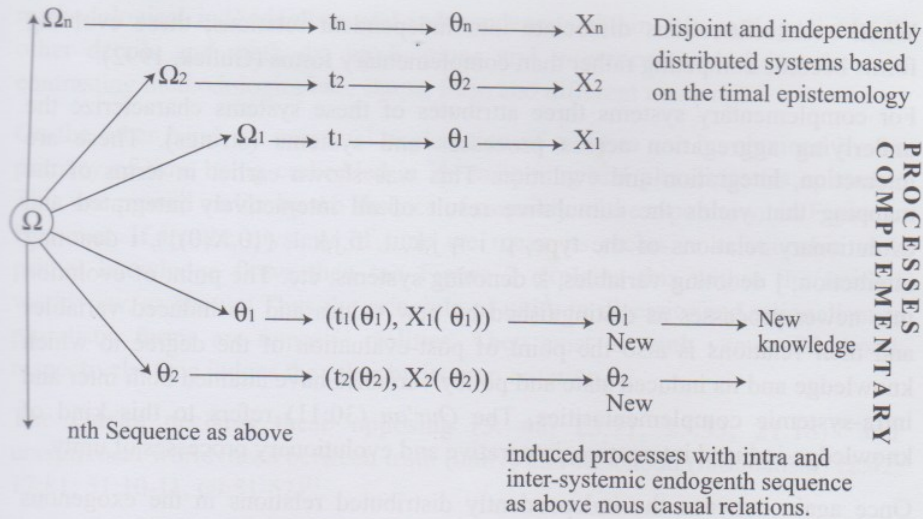


Figure 2: Unity of Knowledge-Induced Processes Versus Methodological Independence of Timal Relations

Between each of the strings of the complementary processes there are intricate and extensive casual interrelation ($\leftrightarrow$) showing the evolution of processes from one chain of the string to another as indicated by the emergence of $\{(\theta_{new}, t_{new}, X_{new}, (\theta_{new}))\}$ and also by the inter-systemic complementarities. These are of the type depicted in Figure 1.

Aggregation Problem

We note the following types of distinct aggregation in the two kinds of realities, namely, unity of knowledge and methodologically independence.

For methodologically independent systems aggregation over processes is given by the independent summation of series. This is reflected as in the case of Harsanyi's (1989) fundamental utilitarianism in social choice making. Even when ethical considerations are given to decision-making using the utility functions, it is found that classical and neoclassical economic theories have continued to rely upon such independently distributed utility criterion functions (Hammond, op. cit).

Non-linear functions have also been used to explain complex behavior. But our methodological results here point out that such complex models eventually bifurcate into competing and independently distributed relations of the type shown in Figure 2 with respect to the time-dependent strings (systems). Bifurcations are usual properties of repetitive forms in chaos and fractal model.

When such bifurcations dissociate into independent relations, these evolving forms become competing rather than complementary forms (Gulick, 1992).

For complementary systems three attributes of these systems characterize the underlying aggregation across processes and systems (strings). These are interaction, integration and evolution. This was shown earlier in terms of the mapping that yields the cumulative result of all interactively integrated and evolutionary relations of the type, $\mu_i \eta_{j,k}, \dots f_{i,j,k}, \dots (\{\theta, X(\theta)\})$, i denoting interaction; j denoting variables, k denoting systems, etc. The point of evolution into newer processes as distinguished by new values and its induced variables and their relations is also the point of post-evaluation of the degree to which knowledge and its induced state and policy variables have attained both inter and intra-systemic complementarities. The *Qur'an* (30:11) refers to this kind of knowledge-induced interactive, integrative and evolutionary processes of unity.

Once again between the independently distributed relations in the exogenous t-frame and the complementary recursive relations generated by circular causation across processes and systems, there are divergent forms of the evaluation criteria. In the case of methodological independence the wellbeing criterion is an additive linear or non-linear social welfare function, as mentioned above. In the case of pervasive complementarities and circular causation the interactive, integrative and evolutionary attributes of the knowledge-centered systems and processes lead to complex aggregations that are sensitive to institutional simulation in concert with the state variables. Thus a policy market interaction is established as an endogenous transformation process.

Ω Episteme as Universal

The string of unity of knowledge in Figure 2 proves that the Ω episteme is a universal that can explain both the unified and complementary worldview out of diversity of entities and also the worldview of methodological independence and individualism. This universal way of explaining all systems is shown by the same type of methodology of recursive evolution and intra-systemic coherence that every system imitates from the nature of Ω episteme. The difference though is that the Ω s episteme are independently and temporarily coherent intra-systemically. This temporary organism of its class is followed by continuous bifurcations into independent systems as time carries independent processes along. Such is the case of evolutionism by natural selection of the selfish gene (Dawkins, 1976).

The contrast between the two worldviews is thus shown by the pervasively unifying nature of the principle of complementarities across diversity of complementing entities versus the competing and rationalistic nature of

methodological individualism and independence. Within this parting divide all other details and methods, implications and inferences underlying the two contrasting methodologies take shape, form and different meanings.

On the other hand, no universal explanation of realities can be obtained by the primacy of time being embedded in its competing and pluralistic Ω s episteme. This was proved earlier by the absence of causality of the type shown in Figure 1. However, if by the mystery of time we mean its recursive relationship with primal knowledge flows then too Figure 2 explains this within the unified worldview, as shown. Thus the principle of unity in diversity and rationalism in pluralistic forms are opposite realities. They exist as truth versus falsehood, respectively. One judges the other by its own criterion.

The Qur'an declares these opposing (5: 48; 23:71; 25:33; 21:18)¹⁰ and unequivocal worldviews between truth (unity) and falsehood (rationalism) (2:42; 17:81; 51:10-11; 69:51-52)¹¹.

Partial Application of the Circular Causation Model

In the light of the recursive circular causation model of endogenously complementary interrelationships that emanate from the epistemological model of unity, we consider here a developmental social wellbeing function in the following variables: Human Development Index (HDI), Human Poverty Index (HPI), Gross Domestic Product (GDP) and Gender Development Index (GDI). If there are to be complementarities between these as the sign of systemic unity between the variables then there must exist circular causation between them by virtue of the underlying endogenous processes. In estimating the presence of causality we use log-linear regression equations between rates of changes in HPI, GDP, HDI and GDI variables in order to explain the elasticity coefficients of the dependent variables in terms of the remaining independent variables by means of the coefficients of the log-linear regression equations.

Let, y denote HPI_k/HPI_{k-1} , HDI_k/HDI_{k-1} , and GDI_k/GDI_{k-1} ,

x denotes GDP_k/GDP_{k-1}

$k=1, 2, \dots$ Being the sequential values of the countries in the selected group as they appear in the Human Development Report (UNDP, 1997-2000)

The following results were obtained on estimating by multiple-OLS method the log-linear regression equations shown, using data on HPI, GDP, HDI and GDI (UNDP, 1997-2000). The data are for the 'medium-HDI countries'. This particular selection was prompted by the need for having sufficient data. The sample size comprised 50 selected countries in the entire group comprising industrialized, middle income and low-income countries.

The circularly interrelated estimated equations are given by,

1. **HPI-GDP-HDI-GDI** relationship

$$\text{Log (HPI}_k/\text{HPI}_{k-1}) = 5.210\text{E-}02 + 2.709.\text{log (HDI}_k/\text{HDI}_{k-1}) - 1.655.\text{log(GDI}_k/\text{GDI}_{k-1})$$

$$\text{t-statistics} \quad (0.921) \quad (0.583) \quad (-0.619)$$

$$\text{Significance levels} \quad (0.362) \quad (0.563) \quad (0.539)$$

$$+ 4.966\text{E-}02.\text{log (GDP}_k/\text{GDP}_{k-1}) \quad (1)$$

$$\text{t-statistics} \quad (0.753)$$

$$\text{Significance levels} \quad (0.455)$$

$$\text{R-square} = 0.033$$

$$\text{F-value} = 0.517; \quad \text{Significance level} = 0.672$$

2. **HDI-HPI-GDI-GDP** relationship

$$\text{Log (HDI}_k/\text{HDI}_{k-1}) = -6.630\text{E-}03 + 2.706\text{E-}03.\text{log ((HPI}_k/\text{HPI}_{k-1}) + 0.271.\text{log(GDI}_k/\text{GDI}_{k-1})$$

$$\text{t-statistics} \quad (-4.367) \quad 0.583 \quad (3.619)$$

$$\text{Significance levels} \quad (0.000) \quad (0.563) \quad (0.001)$$

$$+ 2.148\text{E-}03.\text{log (GDP}_k/\text{GDP}_{k-1}) \quad (2)$$

$$\text{t-statistics} \quad (1.031)$$

$$\text{Significance levels} \quad (0.308)$$

$$\text{R-square} = 0.223$$

$$\text{F-value} = 4.412; \quad \text{Significance level} = 0.008$$

3. **GDI-HPI-HDI-GDP** relationship

$$\text{Log (GDI}_k/\text{GDI}_{k-1}) = -1.75\text{E-}03 - 4.990\text{E-}03.\text{log ((HPI}_k/\text{HPI}_{k-1}) - 8.200\text{E-}03.\text{log(GDP}_k/\text{GDP}_{k-1})$$

$$\text{t-statistics} \quad (-0.561) \quad (-0.619) \quad (-2.370)$$

$$\text{Significance levels} \quad (0.578) \quad (0.539) \quad (0.022)$$

$$+ 0.818.\text{log (HDI}_k/\text{HDI}_{k-1}) \quad (3)$$

$$\text{t-statistics} \quad (3.619)$$

$$\text{Significance levels} \quad (0.001)$$

$$\text{R-square} = 0.297$$

$$\text{F-value} = 6.491; \quad \text{Significance level} = 0.001$$

4. **GDP-HPI-HDI-GDI** relationship

$$\text{log(GDP}_k/\text{GDP}_{k-1}) = -6.120\text{E-}02 + 0.244.\text{log(HPI}_k/\text{HPI}_{k-1}) + 10.504.\text{log(HDI}_k/\text{HDI}_{k-1})$$

$$\text{t-statistics} \quad (-0.486) \quad (0.753) \quad (1.031)$$

$$\text{Significance levels} \quad (0.629) \quad (0.455) \quad (0.308)$$

	-13.269.log (GDIk/GDIk-1) (4)
t-statistics	(-2.370)
Significance levels	(0.0220)
R-square	= 0.129
F-value	= 2.265; Significance level= 0.094

The above estimated results reveal that the relationships among social factors and among growth related factors are of a complementary nature individually taken in these groups. But the relations between growth-related variables and social variables are either too weakly positive to be accounted for any significant complementary relationship or are straight tradeoffs. The debate around the neoclassical tradeoff and thus the inability of such a premise to explain the human development perspective along with poverty alleviation, gender empowerment, entitlement and gender development through a complementary relationship between markets and institutions, is seen to appear for the medium human development countries.

We note from the structural equation (1) that there exists complementary relationship between the rate of change in GDI (same as $\log(HPI_k/HPI_{k-1})$) and poverty reduction indicated by a negative coefficient of the rate of change in GDI. As GDI increases (decreases) HPI decreases (increases). We obtain similar interrelationships from the structural equations of the circular processes (2) and (3). We note that the social variables (rate of change in HDI, rate of change in GDI) are complementary to each other.

Complementarities among the growth-related variables are also found between the rates of change in HDI (as a function of GDP) and GDP but are very weak in equation (1). The same implication also holds for equation (2).

Tradeoff or weak relationship is shown to exist between the rate of change in HPI and the rates of change in HDI and GDP per capita in expression (1). In expression (2) the relationship between the rates of change in HDI and the rates of change in HPI and GDP per capita is very weak. In expression (3) the rate of change in GDI is weakly related with the rate of change in GDP per capita, whereas the relationship with HPI is weak. In expression (4) the rate of change of GDP per capita has a tradeoff with the rates of change in HPI and GDI.

The reason for complementary relations between HDI, GDI and GDP per capita is the functional interrelationships among these variables, which all have the common variable, GDP per capita in them. When converted into rates of change, GDP per capita has the highest value among these variables. Thus a complementary relationship among these variables can be expected. Yet in the estimated equation (2) we note that the relationship between the rates of change in HDI and GDP per capita is weak. Likewise, similar relations are found to be weak in equation (3). In equation (4) there a tradeoff appears between the rates of change in GDP per capita and HPI and GDI. Equation (4), which is

the most reliable one in the relationship between the rates of change in the variables, shows a tradeoff between the rates of change in GDP per capita and of HPI and GDI, and a complementary relation between the rates of change of GDP and HDI. The last result can be explained by the significant role of GDP per capita in the composite measure of HDI.

We also note that in all cases the results are accepted at high levels of significance, above 40 per cent, according to t-statistic. The circular relations among the variables are well specified in terms of the variables included. However, the low values of R-square reflect that the log-linear form of the compound index model may not have been adequately specified in this form. This is a valid reason for circular causation according to the model of complementarities that negates marginal substitution among variables in favor of complex phenomenon better amenable to estimation by simulation methods.

The above empirical results establish our case that, the economic growth agenda of medium HDI countries being of the neoclassical type, there exists significant tradeoffs or weak relations between economic growth and the social variables. The efficiency and equity tradeoff or independence of relationship is thus confirmed. The structural relations of circular causation in the composite index form a social wellbeing index, establishing thus the importance of such a system that can bring out the developmental tradeoffs and complementarities, as the case may be.

Conclusion

Thus, which of the two is the primal reality-knowledge or time? Substantively they are different and opposite realities in the context of the divide between the epistemology of unity of knowledge and the epistemology of methodological individualism and independence. We have shown in this paper that by virtue of the methodological universality of the epistemology of unity of knowledge, this becomes the ultimate foundations of true reality. In this context all other realities, as of dualism and independence, are unsustainable in the scheme of things. Such realities are apparent yet not the essence of the true reality.

The final validity of the above statements can be seen in terms of the argument of Godel and Tarski's theorem (Smullyan, 1992) on the incompleteness of the arithmetical system. In contradistinction to the inference of the incompleteness theorem, the Qur'anic precept of truth for both true and false domains implies that the improbability of the norm of the statement X does not imply the probability of a false statement. For instance the domain of the unseen is 'improbable' by observed inferences. Nevertheless, such an implication is profoundly real in Islamic belief. It therefore cannot be 'provable' as a false statement.

This inference once again establishes the primacy of the epistemology of unity of knowledge over time in answer to the question, which of the two - knowledge or time?

References

1. Whitehead (trans. Griffin & Sherburne, (1978) refers to the concrescent also as 'concrescent unison', 'unison of becoming' (p.124).
"This community of concrescent occasions, forming M's immediate present, thus establishes a principle of common relatedness, a principle realized as an element of M's datum. This is the principle of mutual relatedness in the 'unison of becoming'."

2. Foucault defines the term 'episteme' in the following way (author's editing): "By episteme we mean ... the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems... The episteme is not a form of knowledge (connaissance) or type of rationality which, crossing boundaries of the most varied sciences, manifests the sovereign unity of a subject, a spirit, or a period; it is the totality of relations that can be discovered, for a given period, between the sciences when one analyses them at the level of discursive regularities". (Dreyfus H.L. & P. Rabinow (trans). pp. 16-43, 1983).
3. Qur'an, 6:59: "And with Him are the keys of the Ghaib (all that is hidden), none knows them but He. And He knows whatever there is in the land and in the sea; not a leaf falls, but he knows it. There is not a grain in the darkness of the earth or anything fresh or dry, but is written in a Clear Record".
4. Qur'an, 76:1: "Has there not been over man a period of time, when he was not a thing worth mentioning"?
5. Qur'an, 45:24: "And they say: There is nothing but our life of this world, we die and we live and nothing destroys us except Ad-Dhar (time). And they have no knowledge of it: they only conjecture".
6. Qur'an, 103: "By Al-Asr (time). Verily, man is in loss, except those who have Faith, and do righteous deeds, and (join together) in the mutual teaching of Truth, and of Patience and Constancy".
Qur'an, 76:1: as above.
7. Sahih Bukhari, hadith Al Qudsi No. 4: "Sons of Adam inveigh against [the vicissitudes of] Time and I am Time, in My hand in the night and day".
8. Qur'an, 36:36: "Glory is to Him Who has created all the pairs of that which the earth produces, as well as of their own kind, and of that which they know not".
9. Qur'an, 30:11: "It is Allah Who begins (the process of) creation; then repeats it; then shall you be brought back to Him".
10. Qur'an, 5:48: "And We have sent down to you (O Muhammad) the Book (the Qur'an) in truth, confirming the Scripture that came before it and Muhaymin (trustworthiness in highness and a witness) over it (old Scriptures). So judge among them by what Allah has revealed, and follow not their vain desires, diverging away from the truth that has come to you..."
Qur'an, 23:71: "And if the truth had been in accordance with their desires, verily, the heaven and the earth, and whosoever is therein would have been corrupted! Nay, We have brought them their reminder, but they turn away from their reminder".
Qur'an, 25:33: "And no example or similitude do they bring, but We reveal to you the truth, and the better explanation thereof".
Qur'an, 21:18: "Nay, We hurl the truth against their falsehood, so it destroys it, and behold it (falsehood) is vanished..."

11. Qur'an, 2:42: "And mix not truth with falsehood, nor conceal the truth while you know the truth".

Qur'an, 17:81: "And say: Truth has come and falsehood has vanished. Surely, falsehood is ever bound to vanish".

Qur'an, 51:10-11: "Cursed be the liars, who are under a cover of heedlessness".

Qur'an, 69:51-52: "And verily, it (the Qur'an) is an absolute truth with certainty. So glorify the Name of your Lord, the Most Great".

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