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Webmaster, www.dialectics.org

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Subject: Postludes Series - Postlude IV: 'The Dialectic of the Set of All Sets ...'.

Dear www.dialectics.org Webmaster,

Greetings to you from Foundation Encyclopedia Dialectica!

Background. This letter contains **Postlude IV** of the series of postludes to the recently-published Volume **0** of the major new manifesto by Foundation <u>Encyclopedia Dialectica</u>: <u>A Dialectical "Theory of Everything"</u> – *Meta-Genealogies of the Universe and of Its Sub-Universes*: A Graphical Manifesto. The title of this Postludes series is -- *Portents and 'Pre-Vestiges' of an Immanent Critique of the Ideology in Modern*, *'Mathematico-Science' as a Totality*. This series, as did its predecessor, Preludes series, excerpts contents from Chapter –1 of that work, entitled -- Elements of the [Psycho-]Historical 'Mystery of <u>The Dialectic</u>' and *a Tapestry of Clues* Toward Solution of that Mystery. This 4th Postlude is entitled -- 'The <u>Dialectic</u> of the Set of All Sets…'.

<u>Postlude IV: The Dialectic of the [Finitary] Set of All Sets</u> – The Inescapability of Mathematical <u>'Ideo</u>-«<u>Auto</u>-Kinesis»' Instantiated.

[Note: The "Set of All Sets" is a forbidden idea-object in modern Standard ["actually infinite"] Set Theory.

Yet it is also the most central object of modern 'Natural Set Theory'.

And, it is the very *paradigm* of the F.E.D. dialectical arithmetics.

Consider that version of "'*The* [*Finitary*] *Set of All Sets*" which starts from a realistic, *finitary* version of the *potentially*-infinite set, or "universe", of "<u>N</u>atural" Numbers [the set including all "<u>N</u>atural" numbers up to the maximal <u>N</u>atural number expressible, e.g., by the computer system in use, with that maximum denoted $\overline{\Lambda}$, so that -- $\mathbb{N}_{\overline{\Lambda}} \equiv \{1, 2, 3, 4, ..., \overline{\Lambda}\} \equiv \underline{U}$ niverse-set, <u>U</u>].

Given that "number-universe" as "universe-set", or "universal set", $\underline{U} = \mathbf{N}_{\overline{\Lambda}}$, progressing as "*The* [*Finitary*] Set of All Sets" for that numbers universe-of-discourse, via τ^{P} , and per $\underline{S}_{\tau} = (2^{\underline{U}})^{2^{\tau-1}} = \underline{S}_{\tau-1} \cup 2^{\underline{S}_{\tau-1}}$, this "*Set of All Sets*" successively contains ordered pairs of **N**-type numbers, then ordered pairs <u>of</u> ordered pairs of **N**-type numbers, then ordered pairs <u>of</u> ordered pairs <u>of</u> ordered pairs of **N**-type numbers, and so on, using all "<u>N</u>atural" numbers through <u>A</u> for each stage, τ . [The compound symbol ' τ^{P} ' means the "arrowed", or directed, <u>varia</u>tion of the <u>varia</u>ble τ , passing consecutively, without skipping any values, through the 'Peanic succession' of values that constitutes the fundamental "ordinality", or order, of the "Whole Numbers", W: $\tau = 0, 1, 2, 3, 4, 5, 6, \dots$ We use spectral-order color-coding herein to highlight «aufheben» ordinalities].

This "'[*Finitary*] Set of All Sets" thus already contains all of the wherewithal to model, set-theoretically, the higher "*kinds*" of number that are necessary, as part of '*The Gödelian <u>Dialectic</u>*', described earlier in this series, to solve algebraic "diophantine" equations that the "<u>N</u>atural" numbers cannot solve.

Examples of such N-unsolvable "diophantine" equations, discussed in Prelude Letter V, include --

- x, + 1 = 1, <u>un</u>solvable in N, but <u>solvable</u>, by the number 0, among the "Whole numbers", W, and;
- $x_1 + 1 = 0$, <u>un</u>solvable in **W**, but <u>solvable</u>, by the number -1, among the Integers, Z, and;
- $2x_3 = 1$, <u>un</u>solvable within Z, but <u>solvable</u>, by the number $\frac{1}{2}$, among the "<u>Ratio</u>-nal" numbers, Q, and;
- $\mathbf{x}_{4}^{2} = 2$, <u>un</u>solvable in **Q**, but <u>solvable</u>, by the numbers $+\sqrt{2}$ and $-\sqrt{2}$, among the "<u>R</u>eal" numbers, **R**, and;
- x₅² + 1 = 0, <u>un</u>solvable in **R**, but <u>solvable</u>, by the "<u>i</u>maginary" numbers +i and -i, among the "<u>C</u>omplex" numbers, **C**.

These N-unsolvable "diophantine" equations also include much more "exotic" equations, such as --

- +pq = -qp [<u>non</u>-commutative, <u>anti</u>-commutative number-pairs, solvable, for example, among the <u>H</u>amilton Quaternions, <u>H</u>, and among the 'Geometrical-Arithmetical' <u>G</u>rassmann numbers, <u>G</u>], and;
- [$\mathbf{u} \neq \mathbf{v} \& \mathbf{u}, \mathbf{v} \neq \mathbf{0}$] $\mathbf{uv} = \mathbf{0}$ [zero divisors, solvable, e.g., among the Heaviside/Gibbs $\underline{\mathbf{V}}$ ectors, \mathbf{V} , i.e., for

physical-3-space-model unit-vectors $\mathbf{X} \cdot \mathbf{y} = \mathbf{y} \cdot \mathbf{z} = \mathbf{z} \cdot \mathbf{x} = \mathbf{0}$], for the "dot [•] product" of vectors, and;

• $[\mathbf{w} \neq \mathbf{0}] \mathbf{w}^2 = \mathbf{0}$ [*nilpotents*, solvable, e.g., among the Heaviside/Gibbs <u>V</u>ectors, **V**, i.e., for physical **3**-space

model unit-length vectors: $\mathbf{x} \times \mathbf{x} = \mathbf{y} \times \mathbf{y} = \mathbf{z} \times \mathbf{z} = \mathbf{0}$], for the "cross [x] product" of vectors, and; ...

Each successor *kind* of number of the "Standard" *kinds* of new number-*ontology* irrupted by *'The Gödelian* <u>*Dialectic*</u>', to-date, can be modeled by sets of a *fixed* Russellian-Gödelian "logical type" [or, as defined earlier in this series, of a *fixed depth of sets* [*self*-]*membership*'], each time escalated by one unit of "logical type" above the "logical type" of the sets modeling its immediate predecessor *kind* of number.

The first of the F.<u>E.D.</u> -- "<u>Non</u>-Standard" -- <u>'dialectical</u> meta-numbers' arithmetics, namely the <u>Dialectical</u> Arithmetic, constitutes a break in this pattern of the <u>dialectic</u> of the "Standard" arithmetics. The <u>Dialectical</u> Arithmetic is <u>not</u> 'modeled' by sets [of ordered pairs] of a single, <u>fixed</u> "logical type". Instead, the <u>'dialectical</u> meta-numbers' of this first axiomatic system in the progression of <u>explicitly</u> '<u>dialectical</u> arithmetical' systems mentioned herein are 'modelable' by, and also can be used to model, this very movement of continual "logical type" escalation: the movement which <u>is</u> 'The Gödelian <u>Dialectic</u>' itself!

That is, these first '<u>dialectical</u> meta-numbers' can be used to model the 'in<u>tra</u>-to-in<u>ter</u>-systemic' movement, of cumulative axioms-system 'ideo-ontological' qualitative expansion/progression, mediated by "<u>un</u>solvable" [<u>in</u>]equations, rising from lower axioms-system to «aufheben» next-higher "conservative extension" axioms-system – i.e., rising to a cumulatively more inclusive axioms-system -- in the form of an axioms-system-inadequacy-driven, [Gödel-]incompleteness-driven, <u>immanent</u>-defects-induced <u>movement</u>, which constitutes a continuing <u>dialectical</u>, <u>immanent</u> critique, or <u>self</u>-critique, of each successive arithmetic.

⁻⁻ etc., etc., etc. ...].

More specifically, these '<u>dialectical</u> meta-numbers' can model, and are modeled by, the <u>self</u>-escalation of "logical type" exhibited by that set which is the very root [idea-]object of set theory itself [although an object outlawed by "Standard" set theory]: the set which constitutes the very set-theoretical <u>definition</u> ["extensional definition"] of the set concept itself, the '<u>self</u>-definition' of the set – its definition in terms of itself. This core 'idea-object' of 'Natural Set Theory' is none other than the "'realistic'", finitary, '<u>contra</u>-Boolean',

'ideo-auto-kinesic' "Set of All Sets", $\underline{S} \equiv \{ \underline{S}_{\tau} \mid \tau^{\uparrow} \in W_{\overline{\Lambda}} \}$, "the set of all \underline{S}_{τ} such that τ is any \underline{W} hole number, $W_{\overline{\Lambda}} \equiv \{ 0, 1, 2, 3, ..., \overline{\Lambda} \}$ ", and wherein τ denotes a discrete time variable ['epoch-count'], so that,

 $\underline{\mathbf{S}}_{\tau+1} = \underline{\mathbf{S}}_{\tau}^{2} = \underline{\mathbf{S}}_{\tau} \oplus \underline{\Delta}\underline{\mathbf{S}}_{\tau} = \underline{\mathbf{S}}_{\tau} \cup 2^{\underline{\mathbf{S}}_{\tau}}.$ Therein, $\underline{\Delta}\underline{\mathbf{S}}_{\tau}$ denotes a *qualitative*, *ontological increment* of *new <u>'ideo</u>-ontology'*, "'added to'" ["union-ed with"'] $\underline{\mathbf{S}}_{\tau}$. Note: $\underline{\Delta}\underline{\mathbf{S}}_{\tau} \equiv 2^{\underline{\mathbf{S}}_{\tau}} \equiv the set of all <u>sub</u>sets$ of the Set $\underline{\mathbf{S}}_{\tau}$.

The **solution** for the foregoing **<u>nonlinear</u> set-equation** is the '<u>**meta**</u>-exponential', '<u>self</u>-iterative', '<u>self</u>-<u>reflexive</u>', set-<u>function</u> $\underline{S}_{\tau} = \underline{S}_{0}^{2^{\tau}} = \underline{S}_{0}^{2^{\tau-1}} (\underline{S}_{0}^{2^{\tau-1}}) = \underline{S}_{\tau-1} (\underline{S}_{\tau-1}).$

In that set <u>self-function</u>, $\underline{S}_0 = 2^{\underline{U}} = the set of all <u>sub</u>sets of <u>U</u>, wherein <u>U</u> denotes the "<u>U</u>niversal Set", the [$ *finite*, "constructible"] «arché»-set, containing only <u>non</u>-set [idea-]objects, "<u>U</u>r-elements", or "logical individuals", defining the given "<u>U</u>niverse of discourse".

The "population size" of **the set of all** <u>sub</u>sets of <u>U</u>, the count of the roster of its "*idea-ontology*' -- of the distinct, individual "'idea-objects'" / elements / "'extensional predicate'" <u>sets</u> that is all that this **set of** <u>sub</u>sets "contains" — is denoted by $| 2^{\underline{U}} | = 2^{|\underline{U}|}$, wherein $| \underline{U} |$ denotes the number of distinct idea-objects / elements / "logical individuals" contained in the set <u>U</u>. The elements of set $2^{\underline{U}}$ include <u>no</u> non-sets; no elements of <u>U</u>.

Suppose, for example, that we **begin** simply, from a set \underline{s} , containing only a single, <u>**non**</u>-set, element, x, i.e., suppose that we **begin** from the "singleton" set $\underline{s} \equiv \{x\}$, e.g., from a "universe[of discourse]" having only one "individual" in it. If we do, then the "cardinality" property of set $\underline{s} = -its$ "*quantitative* property" *par excellence* – is $|\underline{s}| = |\{x\}| = 1$, and the "logical type" of set \underline{s} is **0** [since this set has <u>**no**</u> "set braces" <u>in</u>side it].

The "cardinality" of *the set of all subsets* of set <u>s</u> is then: $|2^{\{x\}}| = 2^{|\{x\}|} = |2^{\underline{s}}| = 2^{\underline{s}}| = 2^{\underline{s}}|$

This is so, since *the set of all <u>sub</u>sets* of set <u>s</u>, the *qualitative* set-entity, or "'idea-object", itself, <u>not</u> its *quantitative* property, is written as just 2^{s} , $\& 2^{s} \equiv \{ \{ x \}, \emptyset \}$, with \emptyset denoting the "empty set", "cardinality" **0**.

Given that, the <u>union</u>, ' \cup ', of the set <u>s</u> with *the set of all of its <u>sub</u>sets*, 2^s, is then:

s
$$\cup 2^2 = \{x\} \cup \{\{x\}, \emptyset\} = \{x, \{x\}, \emptyset\}$$
. That set has "cardinality" $|\{x, \{x\}, \emptyset\}| = 3$.

Therefore, the "cardinality" of *the set of all <u>sub</u>sets* of **{ x, { x }, Ø }** is:

 $2^{3} = 8 = |2^{S \cup 2^{S}}| = |2^{\{x\} \cup \{\{x\}, \emptyset\}}| = |2^{\{x, \{x\}, \emptyset\}}|$, and *the set of all <u>sub</u>sets* of the set

 $\{x, \{x\}, \emptyset\}$ is the eight-element set symbolized as $2^{\{x, \{x\}, \emptyset\}}$, which is equal to ---

 $\{\{x\}, \{\{x\}\}, \{\emptyset\}, \{x, \{x\}\}, \{x, \emptyset\}, \{\{x\}, \emptyset\}, \{x, \{x\}, \emptyset\}, \emptyset\}, \{x, \{x\}, \emptyset\}, \emptyset\}$

-- and $\underline{s} \cup 2^{\underline{s}} \cup 2^{\underline{s}} \cup 2^{\underline{s}}$, which, given the intersection(s) of these three sets, has "cardinality" 9 = 8 + 1, & is: { x, { x }, { { x }, { $\emptyset }, { x, { x } }, { 0 }, { x, { x }, 0 }, {$ Thus, the "Set of All Sets", $\underline{S} = \{ \underline{S}_{\tau} = \underline{S}_{0}^{2^{\tau}} = [2^{\underline{U}}]^{2^{\tau}} | \tau^{\underline{\uparrow}} \in W_{\underline{\Lambda}} \}$, self-develops immanently -- $[2^{\underline{U}}] \rightarrow [[2^{\underline{U}}] \cup [2^{[2^{\underline{U}}]}]] \rightarrow [[[2^{\underline{U}}] \cup [2^{[2^{\underline{U}}]}]] \cup [2^{[2^{\underline{U}}]} \cup [2^{[2^{\underline{U}}]}]] \rightarrow ...$ $[2^{\underline{U}}]^{2^{0}} \rightarrow [2^{\underline{U}}]^{2^{1}} \rightarrow [2^{\underline{U}}]^{2^{2}} \rightarrow ...$ $[\tau = 0] \rightarrow [\tau = 1] \rightarrow [\tau = 2] \rightarrow ...$

-- in an «aufheben» progression, i.e., in which each successor contains all its predecessors, and such that --

	[2 ^U]	ł	[[2 ^U] ∪ [2 ^[2^U]]]	ł	$[[[2^{\underline{U}}] \cup [2^{[2^{\underline{U}}]}]] \cup [2^{[2^{\underline{U}}] \cup [2^{[2^{\underline{U}}]}]]]$	∤
	[2 ^U] ²⁰	ł	[2 ^U] ²¹	ł	[2 ^U] ^{2²}	ŧ
τዋ=:	0	<	1	<	2	<

-- i.e., each τ -epoch's version of *this Set* is *gualitatively unequal to* the version native to its immediate predecessor τ -epoch, as well as to all versions, native to all previous τ -epochs, with each τ -epoch's version arising by *immanent critique* [i.e., via *self-«aufheben»*, *'self-meta-element-izing'*, and therefore, in effect, via *'self-meta-«monad»-izing'* such *self-critique*] of its immediate predecessor τ -epoch's version.

It is so because every *t*-momentaneous <u>existence</u> of *this Set* always <u>contradicts</u> its own <u>essence</u> / <u>definition</u>.

The τ -momentaneous <u>existence</u> of **this Set** always contradicts its <u>essence</u> because **this Set** is defined to be **the Set** containing <u>ALL</u> sets possible for its <u>Universe[-of-discourse]</u>, but it <u>never</u> does, and it <u>never</u> can.

It <u>never</u> can, because every distinct set has a unique set of <u>sub</u>sets, <u>qualitatively</u> different from its own content, and <u>qualitatively</u> different from the set of <u>sub</u>sets of other sets.

This Set is therefore always missing precisely those sets which are its own <u>sub</u>sets, including its own "improper" <u>sub</u>set: itself as a whole!

When we, therefore -- responding to the demand of the very nature/definition of **this Set** -- expand **this Set**, by incorporating into it its own [now former] <u>sub</u>sets, as its name requires, it thereby again becomes a different, **cumulatively** larger-in-scale, but nonetheless 'qualo-fractally' "self-similar", version of itself, with **new**, <u>qualitatively</u> different, [ideo-]<u>ontologically</u> different <u>sub</u>sets, which it therefore now also lacks as members of itself, so that it "demands" to be expanded again, to include all of those new <u>sub</u>sets, which, again, changes it into a <u>qualitatively</u> different, 'qualo-fractally' "self-similar" set, once again lacking its own <u>sub</u>sets,

Each such <u>sub</u>set is, as elaborated earlier in this series, the <u>"extension</u>" of an <u>"intension</u>", i.e., of a predicate, connoting a **quality** common to the [one or more] element(s) of that subset.

Thus, this <u>self</u>-[*driven*]**progression** of "'**The Set of All Sets**" in fact constitutes an '**«arché»**-**ic**', a schematic, a rudimentary "'**Psychohistorical Model**" – of a real, temporal, *diachronic "phenomenology*" -- of the progress of human cognition within a given "<u>U</u>niverse of discourse" domain.

It models the process of 'Predico-Dynama-sis', in contrast to, e.g., Boolean 'Predico-Sta-sis'.

'Predico-<u>Dynamasis'</u> is the self-increasing "sensitization" to, and *'explicitization'* of, ever subtler *qualities*, or *predicates*, by which the cognitive function of that fundamental human *"complex unity"* -- the *'Human Phenome/Human Genome'* -- advances human knowledge for a given domain of human experience, in the context of an accumulating and deepening human exploration thereof, e.g., in pursuit of expanded survival/life.

This "'Set of All Sets'' can also be used to aptly model the '<u>phys</u>io-«auto-kinesis»' of the «<u>phys</u>is»; of the physical cosmos — the 'self-meta-unit-izing', 'self-meta-«monad»-izing' "'<u>Dialectic</u> of Nature''' itself.

This *dialectic*, generically, moves 'ever-recurringly', at ever greater 'qualo-fractal' scales, like this -

- **1.** [τ*th* ... *thesis*:] <u>S</u>, is <u>S</u>;
- 2. [τ th <u>contra</u>-thesis:] <u>S</u> lacks 2^S τ ;
- 3. $[\tau th \underline{uni} thesis:]$ $\underline{S}_{\tau} \cup 2^{\underline{S}_{\tau}} \equiv \underline{S}_{\tau+1}$ is $\underline{S}; \dots$

The *'ideo-«auto-kinesis*»' inherent in this defining object of Set Theory, *"'The Set of All Sets"*, <u>S</u>, also constitutes an *immanent critique* -- indeed, a *«reductio ad absurdum»* <u>self</u>-refutation -- of all Set Theories which harbor the -- usually unstated, but typically tacitly presumed -- *'Parmenidean Postulate'*, of eternal *'ideo-«onto-<u>stasis</u>»'*.

This assumption is native, in particular, to so-called "*Mathematical Platonism*", the proposition that all valid set-theoretical idea-objects must be *absolutely stable*, *timeless*, *eternal*, *immutable* -- *unchangeable* by any external agency -- let alone being changeable by any *internal-*, *immanent*, or <u>self</u>-, -causes or -forces. Even Kurt Gödel's thinking was deeply afflicted with this '*Parmenidean Postulate*', which is implicit in Gödel's assertion, below, that the "'<u>existence</u>'" of a "set of all sets" is *impossible* --

"...a set of all sets or other sets of similar extension cannot exist, since every set obtained in this way immediately gives rise to further application of the operation "set of' and, therefore, to the existence of larger sets."

[Solomon Feferman, et al., Editors, <u>Kurt Gödel, Collected Works, Volume II: 1938-1974</u>, Oxford University Press [New York: 1990], page 180, footnote 14, emphasis added <u>by</u> F.<u>E.D.</u>].

Mathematical "<u>existence</u>", for Gödel, evidently meant an *absolutely stable*, <u>static</u> <u>existence</u>; <u>eternal</u> <u>changelessness</u> of <u>immutable <u>entities</u></u>. Thus, Gödel could only see those "<u>larger sets</u>" of which he wrote in the comment above as <u>external to</u>, as <u>absolutely other</u> <u>sets</u> than, any set "<u>obtained</u>" prior to them, and provoking them into <u>existence</u>, or into mental <u>explicitude</u>. He could not see, in the very "<u>immediate-ness</u>" of the succession [progression] of sets he described above, the constitution of a 'continuality' -- even if <u>not</u> of

an **R**-like "continuity" -- of a *single* [ev]*entity*, a *univocal* 'event-entity'. He could not countenance conceiving of this "*immediate*-ist", 'self-flowing' / 'self-[re-]fluxing' / 'self-changing' of 'set-<u>states</u>', or of 'set-<u>dyn</u>ates', as a *single <u>self</u>-movement*, as a "[*quanto-qualitatively*] [*self-*]*growing* [mental] *thing*", rather than as a "*dead*", <u>static</u> [mental] *thing*. But, in actual, self-observable, mental fact, this '*ideo-«auto-kinesis»*' *is* the *single*, *internally self-connected self-movement* that we name "'*The* [finitary] *Set of All Sets*"; a mental '[ev]*entity*' which aptly models, "*ex-tension-ally*", the <u>actual human</u>, *mental praxis*, the <u>actual idea-</u>"operation", the *true* "*in-tension*", that "*sets*" -- that the *human-subject*-ive <u>activity</u> of set(s)-*formation* – *really is*: a movement of conceptual *inclusion*, including of conceptual <u>self-inclusion</u>, the latter especially driving irruptions of new, subtler '*meta-objects*'; new '*ideo-ontology*', new predicates, modeled by sets of ever-higher "logical type".

The axioms of intuitive, "naïve", unguarded set construction, together with this '*Parmenidean Postulate*', deduce to a propositional <u>negation</u> of that '*Parmenidean Proposition*', and, thus, to its «*reductio ad absurdum*» <u>self-refutation</u>, by building set-objects which are <u>self-changing</u>, <u>non</u>-Parmenidean, '<u>auto-kinesic</u>'.

They do so via the deductive construction of the 'Standard "'self-reflexive" Paradoxes', e.g., that of the truthvalue-"'self-oscillating" Russell Set proposition -- "'The set of all sets that are not members of themselves is [therefore is <u>nof</u>] a member of itself." -- or that of the similarly self-oscillating "'This proposition is false.".

They do so also via the construction of the <u>'Non</u>-Standard Paradox' of this **qualitatively**, [ideo-]**ontologically** <u>self</u>-expanding "Set of All Sets". All these "self-moving" mental objects contradict Parmenidean <u>sta</u>sis. The assertion of *Parmenidean 'ideo-stasis*' for all set-objects -- the assertion that "'Set idea-objects do not change."" -- together with the assertion of the other axioms of "naive" Set Theory, deductively yields the construction of these "paradoxical" sets and "paradoxical" propositions as counter-examples, demonstrating the truth, within 'Natural Set Theory', of the <u>negation</u> of that Parmenidean assertion; the truth, relative to the axioms of 'Natural Set Theory', of the <u>counter-proposition</u> that 'Set idea-objects <u>do</u> change [and, moreover, even, or especially, that they <u>self-change</u>]', given the assumed truth of all of those axioms.

This result, by the rules of formal logic itself, establishes -- thus, *immanently* -- the axioms-relative *falsity* of the *'Parmenidean Premise'* within the implicit axioms of *'Natural Set Theory'*.

This result requires the assertion, in its place, of the <u>negation</u> of that [thus deductively <u>self</u>-]contradicted assertion: the affirmation of the possibility, and, indeed, of the ubiquity, of 'ideo-«[auto-]kinesis»', of a <u>dynamical</u> 'idea-ontology' -- of <u>ordered</u>-Heraclitean 'ideo-onto-<u>dynam</u>asis' -- in place of the "Standard" affirmations of Parmenidean 'ideo-onto-<u>stasis</u>'.

This [re-]affirmation, in the case of the fundamental object of Set Theory, of *"The Set of All Sets"* -- of *the very set-theoretical definition of the set concept itself* -- turns out to provide a set-theoretical model of the *«physis»*-inherent generation of *"time"* itself, as the 'unisonance' of the concerted *«auto-kinesis»*, and of the concerted *inter-«kinesis»*, of all *"eventities"*; of the *self-action-«cum»-upon-other(s)-action --* the *«karma» --* of all *"[ev]entities"*, and, thus, *not* as abstract, universe-external, exogenous, formal "time", but as concrete, *'contental'*, *endogenous*, *immanent time*, ultimately *produced* and *continually reproduced* by the *'onto-dynamasis'-driving* subject/object, or action-initiator/action-recipient, *'self-duality'*, *'intra-duality'*, or *'indivi*[sible]-duality', of each [ev]entity in *the cosmological totality* of *subject-verb-object-identical* [ev]entities.

This "[*Finitary*] Set of All Sets" turns out to be, therefore, also a set-theoretical model of none other than the core of what we seek to uncover in this series – a set-theoretical model of the <u>dialectic</u> itself.

[We also note here, in passing, that what we have termed the "<u>extensional</u>" '<u>Dialectic</u> of the Set of All Sets' herein was also detected, in an "<u>intensional</u>" form, by Plato, in his pivotal, "turning-point" dialogue, known as *The Parmenides*, as follows --

"That too is unreasonable, replied Socrates. But, Parmenides, the best I can make of the matter is this – that these forms are as it were patterns fixed in the nature of things. The other things are made in their image and are likenesses, and this participation they come to have in the forms is nothing but their being made in their image.

Well, if a thing is made in the image of a form, can that form fail to be like the image of it, in so far as the image was made in its likeness? If a thing is like, must it not be like something that is like it?

It must.

And must not the thing which is like share with the thing that is like it in one and the same thing [character]?

Yes.

And will not that in which the like things share, so as to be alike, be just the form itself that you spoke of?

Certainly.

If so, nothing can be like the form, nor can the form be like anything. Otherwise *a second form will always make its appearance over and above the first form*, and if the second form is like anything, yet a third. And *there will be no end to this emergence of fresh forms*, if the form is to be like the thing that partakes of it". [E. Hamilton, H. Cairns, editors, *Plato*: *The Collected Dialogues*, Princeton University Press [Princeton, New Jersey: 1989], *Parmenides*, 132d-133, p. 927, *emphasis added by* F.<u>E.D.</u>].

The Parmenides is the very dialogue that marks the beginning of Plato's turn, from his former, *Parmenidean*, *eternally unchangeable 'ideo-onto-<u>stasis</u>' of the <i>"Forms"* [i.e., of the *immutable «Eide»* of Plato's earlier *«Arithmoi Eide-tikoi» Dialectic*], toward his lat[t]er *"self-change"*, *"self-motion"*, or *«auto-kinesis»*, emphasis --

"The dialogues of the Socratic period provide that view of the world usually associated with Plato.

The period of transition and criticism, and the final synthesis, are little noted...

The Parmenides can be taken as signaling the change.

In this dialogue Socrates is unable to defend his Doctrine of Ideas. ...

Where the Republic and Phaedo stressed the unchanging nature of the soul, the emphasis in the Phaedrus is exactly reversed.

In this dialogue, the soul is the principle of <u>self</u>-motion, and we are told that the soul is always in motion, and what is always in motion is immortal.

The difference now between spirit and matter is *not changelessness* in contrast with *change*, but <u>self</u>-motion, the essence of the soul, in contrast with *derived motion*.

The emphasis on self-motion is continued even in the Laws, Plato's final dialogue".

[William L. Riese; *Dictionary of Religion and Philosophy: Eastern and Western Thought*, Humanities Press, Inc. [New Jersey: **1980**]; pages **442-443**; *emphasis added by* F.*E.D.*].

The "Parmenides" character in *The Parmenides* dialogue thus demonstrated to its "Socrates" character a kind of "[*potentially-*]*infinite regress*" *immanent* in the theory of "*Forms*" as espoused by that "Socrates" character.].

Dialogically yours,

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