

Hegel's “‘Algorithm’” for Dialectic.

by Hermes de Nemores

for

Foundation Encyclopedia Dialectica.



Version:	Part I.: v.04.4; Part II.: v.02.0.
Last Updated:	27 January 2017 C.E. / B.U.E.
First Distributed:	18 December 2016 C.E. / B.U.E.

Omni-Copyright Statement. This text is a *partially self-exemplifying exposition of, & a record of an ongoing self-critique of, the ideas advanced herein.* The ‘ideo-system’ behind it is a “‘meta-dynamical’”/“‘meta-evolving’” conceptual object. The time sequence of changes in the form/content of this text is predicted to be both an illustration and an instantiation of the ‘meta-model’ of [ideo-]ontological meta-dynamics that this text explores, as well as of the ‘homeomorphic defect’ of that ‘meta-model’. We expect that successive editions of this document will document an ‘ideo-onto-dynamasis’ rather than an ‘ideo-onto-stasis’, a ‘meta-evolving ideo-ontology’; a ‘multi-meta-ontic, multi-meta-**monadic** ideo-cumulum’; an expanding, and ever “‘thickening’”, increasingly ‘inter- & intra-connected’, “‘inter-acted’” network of ‘inter-implicatory’, ‘inter-determinate’, ‘inter-generative’ ideas, elaborated upon a mounting count of ‘metafinite’, ‘meta-fractal’ scales, all exemplifying a “non-standard”, ‘Contra-Boolean logic’; the ontologically dynamical logic of the **dialectical** “law” of cognition signified by the ‘ideo-ontological’, ‘purely-**qualitative**’, **uQ**-algebraic **inequation** – $\mathbb{H}^2 \nless \mathbb{H}$.

This work is a potential contribution to the collective creative property of the Terran human species: assimilate, disseminate, critique, *and surpass* at will. We, the authors, seek hereby to further neither our monetary riches, nor our public power, nor our personal fame. What we want, money cannot buy. We hope, with your help, to build a better us, and to help to do our ‘infinitesimal’ part in building a better universe [“infinitesimal” differences can matter, as nonlinear dynamics demonstrates]. More monetary wealth will not buy that betterment. More political power cannot impose it. More fame would mainly distract from it. We hope that you have chosen, or will choose, to build a better you. We hold that this choice entails the profoundest consequences for one’s life, as well as for the lives of others. We also hold that such choices belong to you alone. We wish to share, with you, the forthcoming conceptual riches. We will rejoice, and we will be compensated, if you teach us in turn, help us to correct our errors, and thus advance the common-wealth of all beyond this offering. We also request our readers’ forgiveness in the areas of our many shortcomings, some of which, though determined to strive ceaselessly to overcome them, we will never, in a lifetime, overcome. We, the authors, are not publicly accessible, but will endeavor to provide private transmittals to you if you indicate publicly, however cryptically – and we recommend that it be cryptically – your desire that we should do so. We want not that our existences, let alone our egos, should be an impediment to that great reverberating propagation of new cognitions, and of emerging **new kinds** of cognition, of which this text is, at best, an incomplete, imperfect, transitory, and transitional manifestation. We therefore happily forego personal credit, and, by thus renouncing in advance the [remote] possibility of any notoriety resulting thereby, hope also to retain more lifetime for the continuation of this work. **Dialectical Ideography** as set forth herein is interpreted variously as –

- (0) a **dialectical-ideographic language**; **dialectical mathematics**; or **mathematics of dialectic**, for mathematical ‘**mimesis**’/‘**memesis**’ of a ‘**meta-monadic**’ ‘**aufheben**’ “‘**dialectic of Nature**’” as **Totality**;
- (1) a calculus of ‘**qualo-quantitative change**’, encompassing an **explicit**, ideographical arithmetic for the **dimensional unit**[e]s or **metrical ‘monads’** of classical ‘**dimensional analysis**’, and, thereby, ‘semantifying’ the “meaningless” singularities [zero-division-induced, finite-time ‘infinite’ values] of **especially** the “unsolvable” [in part, because of those very singularities] **nonlinear** integrodifferential equations and their solution-functions, via their **metrical ‘re-qualification’** using those **new, explicit ‘metrical qualifiers’** of this, **u**, ‘**dimensional arithmetic**’, concretizing and operationalizing Plato’s ‘**arithmoi monadikoi**’ & Diophantus’s **M**;
- (2) an alternative, **onto-logical, contra-Boolean algebra**;
- (3) an **ideographic, ‘onto-dynamical’** “symbolic logic” for state-space/control-parameter-space, or ‘state/control meta-space’ “‘**meta-dynamics**’” of ‘meta-finite’, [self-]conversion-singularity ‘**self-bifurcation**’;
- (4) a **mathematics for modeling the history of mathematical ideas** as well as a [psycho]historical algebra and arithmetic for modeling the “‘**meta-evolution**’” of the **sciences generally**; an **ideography** for the [psycho]history of ideas; an **ideography** of the “‘**meta-dynamical**’” logic of conceptual self-innovation & self-development; a ‘philosophical algebra’ or trans-Leibnizian, **dialectical** ‘characteristic universalis’; an arithmetic and algebra of innovative conception or of the creative conceptual process;
- (5) a rules-system for an **ideographical language of qualitative, ontological self-escalation** in concretely self-transcending [meta-][super*]-systems;
- (6) a generic algorithm for the ‘**meta**’ operation regress; for a trans-Hegelian, ‘autopoiesic’ version of the ‘**aufheben**’ operation; & for a “‘**meta-dynamical**’”, ‘temporalized’, **diachronic**, “‘**meta-evolutionary**’” version of the Russellian/Gödelian “logical types hierarchy”;
- (7) a model for a ‘**meta-fractal**’, ‘**contra-Cantorian theory of totalities**’, of ‘**meta-finite**’ arithmetics, and of the “**foundations**” of **mathematics**;
- (8) an arithmetic, algebra, geometry, & analysis built upon certain “**non-standard natural numbers**”, i.e., upon the ‘**Gödelian meta-natural meta-numbers**’, a space of **non-Musean** “hypernumbers” of **2nd** degree, ‘made up out of “**standard**”, **1st** degree “**natural numbers**”, ‘instancing’ those “**non-standard models** of **1st** order Peano arithmetic” implied by the **1st-order** conjunction of Gödel’s completeness & incompleteness theorems, as by the Löwenheim-Skolem theorem, yielding thereby an ‘**ontologically dynamical**’, ‘de-Parmenideanized’, ‘de-Idealisticized’ actualization of Plato’s “‘**arithmetic of dialectics**’”, his “**assemblages of idea-‘monads**” or of “**εἰδὲς units**” -- his “**arithmoi eidetikoi**”.

This treatise, in addition to that of ‘**pictogramic**’, ‘**ideogramic**’, & ‘**phonogramic**’ symbolization, draws also upon the power of neo-mythological, allegorical, & **mythopoeic** — that is, of “**psychohistorical**” — **symbolization** to aid in the conveyance of its most urgent messages. Thus, **everything** about the **Foundation** is **symbolic**. Not just the **Ideographies**. **Everything**. We leave it to the reader to decide what about the **Foundation** is “‘meta-fiction’”, vs. what is real, as a test of the reader’s discernment. **Dialectical Ideography** is, we believe, a humble but potent **seed**. As with the **several** non-Euclidean geometries that arose from the failed attempts to prove the absoluteness of Euclid’s geometry, these **non-Parmenidean**, ‘**contra-Boolean**’, and ‘**contra-Cantorian**’, “‘**onto-logical**’” & ‘**onto-dynamical arithmetics**’ & their **algebras of dialectics** may bear fruit for **humanity** only if germinated through the intra- and inter-personal **dialogue**, & **dialectic**, of assimilation, critique, refutation, and supercession. The taking to heart of the ideas “**graphed**”, **pictographically**, **ideographically**, and narratively [phonogramically], herein, can produce profound transformation in the very identity of the person so taking. Panic in response to perception of the early signs of such transformation by other perceivers of such transformation may elicit, from some of those perceivers, a **violent** reaction. In particular, the intimations of the ‘**meta-human**’ –



– implications of the ‘**cumulum**’ of **human[oid]** [meta-]evolution is profoundly disturbing to some. We therefore lodge the **Omni-Copyright statement** above together with this countervailing caveat: we recommend that you disseminate the ideas of this document, and/or related ideas of your own discovery, with careful judgment. Give the friends of **humanity** a head start vis-à-vis their **adversaries**. The **system**, more accurately, the **systems**, of **dialectical ideography** glossed herein continue to **evolve** and to “‘**meta-evolve**’” rapidly in our research. They **burgeon beneath** our feet. **Dialectics** should inculcate humility. “Perfection” is not a final “‘meta-state’” that can be finally manifested, but an open-ended, ‘uncompleteable’, asymptotic process, moving from greater to lesser imperfection. We realize that conceptual ‘homeomorphic defect’ is inescapable for cognizing beings such as ourselves. Even at best, we must always be partly wrong. Even at best, one cannot be finally, completely, and wholly right. One’s mental constructs cannot ever be the truth, the whole truth, and nothing but the truth. But one may be right enough for one’s time, for one’s moment, for one’s role, and for one’s part; right enough to help one’s contemporaries to live through, and beyond, one’s time, that they thus, potentially, might enjoy the privilege, the pain notwithstanding, of a vital [‘life-ful’] and willing participation in the succeeding epoch of imperfection.

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Preface.

This essay, entitled ‘Hegel’s “‘*Algorithm*’” for *Dialectic*’, is the *first* part of *our* planned suite of *three* methodological essays.

These essays culminate in a setting forth of the *methodology* that *we* use for the *application* of *our* ‘*mathematics of dialectics*’.

This ‘*mathematics of dialectics*’ was *originally discovered and developed* by *our* co-founder, Karl Seldon.

Since *our* founding, this ‘*mathematics of dialectics*’ has been in *ongoing development* by the *F.E.D.* research collective as a whole, under the direction of Karl Seldon.

The remaining *two* parts of this planned suite of essays are entitled, respectively, ‘*Marx’s Dialectical Method*’, by Aoristos Dyosphainthos, and ‘*Universal Algorithmic Heuristic Method*’, by *our* co-founder.

-- *E.D.* Editors, Special Council for *Encyclopedia Dialectica*.
Terminious, California, **27** January **2017** C.E./B.U.E.

Introduction.

When **we** of **F.E.D.** come to Hegel's work, **our** work is a matter of the immanent critique of a sub-scientific, capitalist-philosophical ideology.

In the specific case of Hegel's work, this involves a mission of rescuing and salvaging treasures of dialectical insight from out of the ruins of Hegel's mystifications, of his reifications, of his hypostatizations, of his concept-fetishisms, and of his 'subject-object inversions'.

Hegel's work is rampant with the kind of 'pseudo-agent positings' which such verbal 'subject-object inversions' typically entail.

Moreover, **our** work, with respect to Hegel's work, is also a mission of rescue for his genuine insights, from out of the ruling-class-power-propping ideological theism to which Hegel had to feign allegiance in order to keep his job [cf. Newton's hiding of his unitarianism vis-à-vis the prevailing trinitarianism of his time and clime].

Our objective in this mission is to extract Hegel's potential scientific contribution to the discernment, to the derivation, and to the construction, of a "universal method" for the «*mathesis universalis*», i.e., for learnable subject-matter in general; for its discovery, and also for the optimal presentation of such discovery, combined.

Engels took a "cheap shot" at Hegel's work when he implied, in Engels's Ludwig Feuerbach and the End of Classical German Philosophy, that, about the "Absolute Idea" -- in the final section, of that title, in Hegel's «Logik» -- Hegel had "absolutely nothing to say".

On the contrary, a rich content, albeit a content brief in expression -- for Hegel -- resides there.

Hegel may have despised, in general, any idea of a 'philosophical algorithm' modeled on the mathematics of his time. He may have railed against any idea of a methodology that smacked of mathematics, as he knew it -- if applied to that which was, for Hegel, the ultimate domain of the human spirit, and of human knowledge: to Philosophy.

Hegel may have disdained any idea of a heuristic recipe "externally" guiding philosophical inquiry, and/or guiding the presentation of the distilled fruitions of such inquiry. He may have rejected out of hand the very possibility of any successful "method" imposing forms upon such content; upon the subject-matter of such inquiry and of such presentation, from outside of it, from without it, after the manner of "external reflection", i.e., rather than being driven solely by that content itself.

Be that as it may notwithstanding, Hegel did provide succinct accounts of his general procedure for dialectic presentation.

In the sequel, **we** shall review those accounts in detail, and describe the ways in which their prescriptions are captured, and in a unified way, in the mathematical rules-system, in the generic interpretation of that rules-system, and in the Seldon-function algorithm, for the N_Q arithmetic, **F.E.D.**'s 'First Arithmetic for Dialectic'.

A Note on Notation. For more information regarding the definitions and the 'ideographical etymology' of the special arithmetical and algebraical symbols employed herein, click on the following URLs --

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PART I. ‘ANALECTATION’.

Hegel’s “‘Algorithm’” in his Own Spoken Words, as Recorded by his son. Consider, first, Hegel’s *writings* about his “‘*encyclopedic*’” «*arché*» category, that of “«*Logik*»”, especially in the final section of his **1812** treatise «*Wissenschaft der Logik*»¹, and, second, Hegel’s ‘*speaking*s’, in his *lectures* on that «*Logik*», in the form in which they have survived, as transcribed -- of course, imperfectly -- by his son, Karl Hegel². In the latter, Hegel provided a capsule description of the first-triad+ triadic progression of his version of dialectic in general, and of his «*Logik*» specifically. This description is, we hold, also a *prescription* for a mode of, according to Hegel, a potentially pedagogically advantaged, systematic, dialectical *method of presentation* of the fruits of an equally advantaged, dialectical *method of inquiry*.

An algorithmic model of the unity of the two -- of method of inquiry/discovery, & of method of presentation -- is what we seek, in terms of an ‘heuristic algorithm’ for dialectic-in-general.

However, the phrase ‘“algorithm”’ for dialectic’, as that phrase is employed herein, refers to Hegel’s systematic, dialectical *method of presentation alone*.

Reproduced below is Hegel’s description of such dialectic³, in his own [spoken] words, as copied down by his son, & as translated into English, from the German, by Clark Butler [text block separation & passage numbering added by F.E.D.]:

- (1) “The first determination [F.E.D.: I.e., the *first* category] is immediate, while the second one constitutes the sphere [F.E.D.: E.g., the increment to the *explicit* *Domain*] posited in its differentiation from the first. Within *every* simple first determination [F.E.D.: I.e., *first* category], [e.g., ground,] what is *determinately* [F.E.D.: categorially] *different* from it [e.g., the consequence of the ground] is at once also present, but it is at first present without being explicitly posited.”
- (2) “In the second determination [F.E.D.: I.e., the *second* category], finitude [and with it contradiction] again enters.”
- (3) “The third determination [F.E.D.: I.e., category] is the unity of the first and second, in which the contradiction is resolved.”
- (4) “. . . *Every* newly emerging concept [F.E.D.: I.e., category] is more [F.E.D.: *thought*] concretely determinate [F.E.D.: I.e., is more *specifications-rich*; is definitionally-richer] than its predecessor.”
- (5) “We are always carrying *everything* that went before along with ourselves into what is new [F.E.D.: This describes the characteristic of dialectical progression that *we* call “‘*evoluteness*’”], but *everything* prior is, within what is new, put in its determinate place [F.E.D.: I.e., each category is placed in a consecutive, *ordinal* ordering, in terms of its relative ‘*specifications-richness*’, or ‘thought-complexity’].”
- (6) “Whereas, in what preceded, each [momentarily immediate] determination [identifying God in its own time] passed as ultimate [F.E.D.: I.e., as what *we* call ‘meta-meristmal’], it is now demoted into being only a [F.E.D.: [*sur*]passed/*past*] moment of the self-concept.”

¹*Science of Logic*, means, herein, the so-called “Larger Logic”, or “‘Major Logic’”, as distinguished from the abbreviated version that forms the opening part of Hegel’s later *Encyclopedia of the Philosophical Sciences*. It is the “Larger Logic” we mean when we write simply «*Logik*».

²See: G.W.F. Hegel, *Lectures on Logic*, transcribed by Karl Hegel, translated by Clark Butler, Indianapolis: Indiana University Press, **2008**.

³*Ibid.*, pp. **79-80**, underline emphases added by F.E.D..

From the above, we rescue, from its imbedding mystifications, the following. We hold the result of this rescue to be a veritable treasure trove of description/prescription for a potentially universal method, traditionally named dialectic:

- (§1) “‘The first determination [F.E.D.: This is the ‘*first* category *feature*’ of dialectic, per Hegel] is immediate, while the second one constitutes the sphere [F.E.D.: E.g., the *explicit* expansion of the *Domain* of discourse] posited in its differentiation from the first. Within *every* simple first determination [F.E.D.: I.e., *first* category], e.g., ground, what is *determinately* [F.E.D.: I.e., categorially] *different* from it, e.g., the consequence of the ground, is at once also present, but it is at first present without being explicitly posited.”
- (§2) “‘In the second determination [F.E.D.: This is, for *us*, the ‘*second* category *feature*’ of dialectic, per Hegel], contradiction [F.E.D.: E.g., opposition] enters.”
- (§3) “‘The third determination [F.E.D.: This is the ‘*third* category *feature*’ of dialectic, per Hegel] is the unity of the first and second, in which the contradiction [F.E.D.: E.g., the opposition] is resolved.”
- (§4) “‘*Every* newly emerging concept [F.E.D.: I.e., category] is more [F.E.D.: *thought*] concretely determinate [F.E.D.: I.e., is richer in *specifications*] than its predecessor.” [The “‘*self-complexification feature*’ of *dialectic*].
- (§5) “‘We are always carrying *everything* that went before along with ourselves into what is new [F.E.D.: This describes the characteristic of dialectical progression that *we* call “‘evoluteness’”], but *everything* prior is, within what is new, put in its determinate place [F.E.D.: Placed in ‘consecutive ordinality’ -- i.e., each category is placed in a consecutive, *ordinal*, rectilinear, systematic ordering, from simplest to most complex, in terms of its relative “determinateness”/‘*specifications*-richness’/‘*thought*-complexity’ -- in relation to all other categories so far *explicitly* contained/posited in the new ‘cumulum’ of categories; newest and old[er] categories together; newest and prior/earlier/‘predecessive’ categories alike].” [The “‘*evoluteness*’” and ‘*categorical ordinality features*’ of *dialectic*].
- (§6) “‘Whereas, in what preceded, each momentarily immediate determination [F.E.D.: I.e., category] passed as ultimate [F.E.D.: As what *we* call ‘meta-meristematic’, or ‘vanguardian’], it is now demoted into being only a moment [F.E.D.: I.e., into being only a *part*, whose ‘ultimaticity’ is now [*sur*]passed/past, but whose demoted presence is still “‘carried along [together] with” the new ultimate, which is also, in its turn, “ultimate” only in a *momentary*, temporary, transitory sense, and likely to be “demoted”/“surmounted” in the “future” of the presentation, unless it is the concluding category of that presentation]... .” [The “‘*supersession*’” *feature* of *dialectic*].

Our Ideographical, Neo-Arithmetical Translation of Hegel’s “‘Algorithm’”. How do *we* go about it, so as to “‘capture” these core “‘*characteristica*” of *dialectic*, per Hegel, e.g., in the written language-form of an algebraic ideography, i.e., of a ‘character-language’, a *direct* ‘idea-writing’, and, indeed, via the paradoxical-sounding medium of a “‘purely”-*qualitative arithmetic*, & thus also, potentially, in a “‘purely”-*qualitative algebra*? We do so by way of the “‘rules-system” described below. By it, we seek a *syntax* which “‘seconds””, which parallels, which mirrors the *semantics* of *dialectics*, even if only with the shortest of shorthands; even if with a kind of ‘Hemingwayan concision’.

Suppose that we start by symbolizing a “determination” -- i.e., a *quality*, a *specification*, a *characteristic* -- e.g., a *category* representing, collectively, all of those *individuals* who exhibit that same *quality* -- by means of the compound ideogram ‘ \boxed{n} ’. This ‘category-symbol’ represents a[n *indefinite*] *number* [or «*arithmos*»] of *units* that all share that same *quality*. If we do so, then, in this compound symbol, ‘ \boxed{n} ’, the *generic* ‘ $\boxed{}$ ’ component might be there to indicate that this category is characterized, or is ‘characterizeable’, and is defined, by some definite *quality*, or by a precise ‘*qualities-complex*’.

In that case, we would be asserting that the perhaps *many individuals* that our ‘category-symbol’, ‘ \boxed{n} ’, denotes -- in a *sole, univocal*, collective way -- all exhibit that *single quality*, or a system/complex of associated, interconnected *qualities*. The ‘post-subscript’ component of this compound symbol, ‘ \boxed{n} ’, namely, ‘*n*’, might then stand for a given “**Natural**” *number*, defined [‘ \equiv ’] as follows: $n \in \mathbf{N} \equiv \{1, 2, 3, \dots\}$ [with ‘ \equiv ’ denoting the phrase “‘is equal to by definition”’]. That ‘*n*’ would be the ‘*particularizer*’ of ‘ \boxed{n} ’, that designates a *particular* category, but, so far, only *generically*, by indicating the numbered place, the ‘order-number’, of this category in a progression of categories to which this category inherently “belongs”. I.e., this subscript signifies the “*ordinal number*”, or the “*order* of occurrence”, of ‘category-symbol’ ‘ \boxed{n} ’, in its native categorial progression, &/or in its native ‘cumulum’ [“*non*-amalgamative sum”], of multiple ‘category-symbols’ that all “belong together” [cf. Plato’s «*eide*» *dialectic*], i.e., that are inherently and systematically interconnected with one another.

I.e., this “order **n**umber”, ‘**n**’, refers to the “determinate place”, the systematic position, of this ‘category-symbol’, \boxed{n} , in a whole, present accumulation, or “ordered” ‘cumulum’, of ‘category-symbols’, arrayed systematically, from ‘thought-simplest’ [*fewest* thought-determinations] to most ‘thought-complex’ [*maximum* of thought-determinations, for the **D**omain being described]. It refers to the systematic order of that ‘category-symbol’ in the present stage of a categorial “progression” or “series”, as a model of a **D**omain “to” which, or “in” which, we might be asserting that the category symbolized by \boxed{n} “belongs”.

We might then wish to represent, by arithmetical operations, the interrelations, the interactions, the combinations, of such ‘category-symbols’. We might think, first off, of defining, generically, algebraically, the combinations of any category with any other category or categories. But, as it turns out, it is even more crucial to define, algebraically, the combination of any given such category with itself. Using a generalized kind of categorial-arithmetical “multiplication” operation, symbolized via \boxtimes , to model our operation of categorial combination, we might model categorial ‘self-combination’ by ‘category-symbol’ “self-multiplication”: $\boxed{n} \boxtimes \boxed{n}$.

Suppose we further interpret this symbol-formation, $\boxed{n} \boxtimes \boxed{n}$, as denoting a dialectical immanent transformation, or ‘self-transformation’, as immanent critique, or ‘self-critique’, of the adequacy, ‘ultimaticity’, or finality of category ‘ \boxed{n} ’?

“Determinate negation” operations change/negate only one (or some) determination(s) of a given category. It is *not* “abstract negation”, turning the category upon which it operates into “abstract nothing”. We interpret $\boxed{n} \boxtimes \boxed{n}$ as equivalent to $\neg_n \boxed{n}$ -- to an operator \neg_n , representing the dialectical determinate negation operation, e.g., the «aufheben» negation operation, specific to category \boxed{n} . Therein, the “operator symbol”/‘operation symbol’, \neg_n , is applied to the symbol for *its own* category, namely, to \boxed{n} . Negation sign \neg_n combines horizontally-inverted ‘ \neg ’ with its vertical inversion. As an operation sign [operator], it stands for the activity which brings out opposition, which evokes implicit opposition into ‘explicitude’. Mutual opposition is the meaning of the sign ‘ \neg ’ when it occurs as a relation sign.

As our regular readers know well, our immanent critique, or ‘self-critique’, interpretation of $\boxed{n} \boxtimes \boxed{n}$, means that we intend, by this self-multiplication-signed dialectical self-negation of ‘category-symbol’ \boxed{n} , to signify moving a given categorial progression presentation on[ward], to[ward] its [next] higher level, e.g., to its next more adequate/complete categorial ‘cumulum’ model & explanation of its target totality/**D**omain. Typically, this would mean shifting the focus of the presentation, &, thereby, of the attentions of its ‘presentees’, one step “higher” in level of organization & into greater ‘thought-specificity’, ‘thought-complexity’, or ‘thought-concreteness’. It would mean shifting attentions to the presently-existing ‘self-hybridizations’/‘self-combinations’, &/or to the mutual or ‘mere hybridizations’, of [some of] the individuals that seem to constitute the category \boxed{n} alone, if viewed only upon the native level of organization of category \boxed{n} . I.e., the present individuals that make up category \boxed{n} may also be [presently] ‘multiply contained’; ‘nestedly-contained’. They may be contained also in (a) “higher”, more inclusive, categor(y)(ies). They may be found inside the ‘meta-individuals’, the higher units, that constitute (a) therefore “higher” categor(y)(ies). A favorite example of this is that of the atoms that make up your body, most of which are also presently contained in the molecules that also make up your body, most of which are, in turn, also presently contained in the cells that also make up your body, & so on, in an instance of the kind of finite, nested, ““multi-scaled, mutual-similarity scales-regress”” that we call a ‘qualo-fractal’. Synchronically, molecules come into mental view via a dialectical, i.e., an «aufheben» escalation [‘es-scale-ation’] up in scale from the atoms scale, or atoms ““level of organization””, to the next, or ‘meta-atoms’, scale/level of organization. The latter scale exhibits the form of a simultaneous ‘annulment/elevation/preservation’ [\equiv «aufheben»] of attention, up from the atoms scale. The generic arithmetical rule, or “algorithm” [“operatorial recipe”] that we have found to work well for such categorial [self-]multiplication, i.e., [$\boxed{n} \boxtimes \boxed{n}$], or “squaring” [\boxed{n}^2] -- and also for the multiplication of one ‘category-symbol’ by another [$\boxed{j} \boxtimes \boxed{k}$, such that $j \neq k$], is, using \boxplus to denote ‘generalized addition’ [in this case, ‘non-amalgamative’ addition] --

$$\boxed{n} \boxtimes \boxed{n} \equiv \boxed{n}[\boxed{n}] \equiv \neg[\boxed{n}] \equiv \neg_n[\boxed{n}] \equiv \boxed{n}^2 = \boxed{n} \boxplus \boxed{n+n} = \boxed{n} \boxplus \boxed{2n}.$$

More generally, we “‘assert [‘ \blacksquare ’] the axiom [asserting it without proof]” for this product rule by means of the expression --

$$\blacksquare [\forall j, k \in \mathbf{N}] [\blacksquare_j \boxtimes \blacksquare_k \equiv \blacksquare_j [\blacksquare_k] \equiv \neg_j [\blacksquare_k] \equiv \blacksquare_j \blacksquare_k = \blacksquare_k \boxplus \blacksquare_{j+k}].$$

This means that, in the **first** series of equations above, the result, or “product”, of the self-multiplication or self-interaction of a category-representing symbol, \blacksquare_n , in the **first** place, self-reproduces -- yields itself, \blacksquare_n , back again.

But, in the **second** place, it also yields a qualitative expansion, an ontological expansion, a category for a qualitatively different kind of being, and for a higher [more inclusive] level/layer/scale of organization, in relation to the kind of being, the ontological category, represented by \blacksquare_n . It yields, in that **second** place, a new, a different-subscript-bearing, a larger-subscript-bearing -- doubled-subscript-bearing -- later-in-order category-representing symbol, \blacksquare_{2n} .

This latter, later-in-order category-representing symbol, \blacksquare_{2n} , is “‘added”’ [\boxplus] back to the earlier-in-order category-representing symbol, \blacksquare_n . That earlier-in-order ‘category-symbol’ is the one from out of which that later-in-order ‘category-symbol’, \blacksquare_{2n} , was “‘born”’. But this addition does **not** “amalgamate” the **2** categories into any **1** category. Their heterogeneity, their qualitative difference, their scale-/level-difference, keeps these **2** ontological categories apart.

That **second**-in-order, “new” ‘category-symbol’ was “‘born”’ by means of a ‘self-action’ [modeled by means of this arithmetical ‘self-multiplication’ operation] of that earlier-in-order ‘category-symbol’, \blacksquare_n , itself.

The **second** series of equations above means that the result of the “multiplication” of a ‘category-symbol’, \blacksquare_k , by another ‘category-symbol’, \blacksquare_j , reproduces, yields back again, also, & in the **first** place, that multiplicand ‘category-symbol’, \blacksquare_k .

But it too net-yields a ‘qualitative increment’, potentially representing an ontological expansion, a new level/layer/scale of organization, in the **second** place. It yields, in that **second** place, a new, different-subscript-bearing, larger-subscript-bearing, later-in-order category-representing symbol, \blacksquare_{j+k} .

The subscript of that **second** ‘category-symbol’ is the [additive] combination of the subscripts of its **two** “factor” ‘category-symbols’, i.e., of that of the “multiplier” ‘category-symbol’, \blacksquare_j , and/or with that of the “multiplicand” ‘category-symbol’, \blacksquare_k . This new ‘category-symbol’, \blacksquare_{j+k} , represents the **net** symbolic result of the interaction, i.e., the combination, of ‘category-symbol’ \blacksquare_j with ‘category-symbol’ \blacksquare_k .

Let’s **start** with ‘category-symbol’ \blacksquare_1 , as representing the “**first** born” ‘category-symbol’, the «**arché**», the “**starting**” ‘category-symbol’, in a progression [i.e., in an ‘ordered non-amalgamative sum’] of [dialectically]-related, i.e., of «**aufheben**»-related, ‘category-symbols’.

Such a progression/“‘sum”’ stands for an ‘ordered qualitative superposition’ of the meanings of multiple, Domain-interconnected, dialectically-related categories.

Then, by the “self-interaction” of the **starting** ‘category-symbol’, \blacksquare_1 , per the above-stated product rule, i.e., if we “square” \blacksquare_1 , i.e., “interact it with itself”, we obtain --

$$\blacksquare_1 \boxtimes \blacksquare_1 \equiv \blacksquare_1 [\blacksquare_1] \equiv \neg [\blacksquare_1] \equiv \neg_1 [\blacksquare_1] \equiv \blacksquare_1^2 = \blacksquare_1 \boxplus \blacksquare_{1+1} = \blacksquare_1 \boxplus \blacksquare_2.$$

The result of this “self-interaction” of \blacksquare_1 , namely $\blacksquare_1 \boxplus \blacksquare_2$, is a “non-amalgamative sum” [cf. Dr. Charles Musès].

That is, as with “adding together” in the proverbial “apples + oranges” sense, the sum $\mathbb{Q}_1 \boxplus \mathbb{Q}_2$, does *not* reduce to, or combine into, any single ‘category-symbol’, or ‘category-value’, call it \mathbb{Q}_x .

No such \mathbb{Q}_x exists [$\nexists \mathbb{Q}_x$] in this categorial arithmetic, and in this categorial algebra, for dialectic.

In terms of the axioms of this axioms-system for dialectical arithmetic, this is because of an axiom of this $\mathbb{N}\mathbb{Q}$ axioms-system, one that we assert [\vdash] as being true without proof, as with axioms generally, & that reads -- ‘ $\vdash [\forall j, k \in \mathbb{N}][[j \succ k] \Rightarrow [[\nexists x \in \mathbb{N}][[\mathbb{Q}_j \boxplus \mathbb{Q}_k = \mathbb{Q}_x]]]$.’ -- with ‘ \succ ’ signifying quantitative inequality, i.e., the ‘strictly greater than or less than’ relation. Of course this axiom, and the other axioms of the $\mathbb{N}\mathbb{Q}$ axioms-system, were designed, precisely, so as to make our ‘*first*’ arithmetic for dialectic fit the *features* of generic dialectic that we are, in this essay, demonstrating it to fit. That is the “because” for these axioms. You can read this rule off as “For every Natural number j and for every Natural number k, it is true that j *not* equal to k implies that *there does not exist* a Natural number x, such that [\vdash], \mathbb{Q}_j plus \mathbb{Q}_k equals \mathbb{Q}_x ”.

The ‘category-symbols’ \mathbb{Q}_1 and \mathbb{Q}_2 symbolize qualitatively-different qualities. That is, \mathbb{Q}_1 represents the qualit(y)ies shared by all of the individuals that “make up” the category that \mathbb{Q}_1 represents, and \mathbb{Q}_2 represents also the other-than- \mathbb{Q}_1 qualit(y)ies shared by all of the individuals that “make up” the category that \mathbb{Q}_2 represents. Intuitively, that is why these *two* distinct ‘category-symbols’ cannot reduce to, or combine into, any other, *single*, ‘category-symbol’, at least not at the same level, or scale, of generality, or of specificity, as that which is being represented by both \mathbb{Q}_j and \mathbb{Q}_k .

In terms of the axioms of this axioms-system for dialectical arithmetic, this quality-difference is because of the axiom --

$$\vdash [\forall j, k \in \mathbb{N}][[j \succ k] \Rightarrow [\mathbb{Q}_j \not\equiv \mathbb{Q}_k]].$$

-- which you can read off as “‘For every Natural number j and for every Natural number k, if j is quantitatively unequal [\succ] to k, then \mathbb{Q}_j is qualitatively unequal [$\not\equiv$] to \mathbb{Q}_k ”’.

If we “*cube*” \mathbb{Q}_1 , i.e., if we ‘*aufheben*» self-negate’ \mathbb{Q}_1 *twice*, then we obtain a “‘negation of negation’” --

$$\begin{aligned} \mathbb{Q}_1^3 &= \mathbb{Q}_1 \boxtimes \mathbb{Q}_1 \boxtimes \mathbb{Q}_1 \equiv \mathbb{Q}_1[\mathbb{Q}_1[\mathbb{Q}_1]] \equiv \neg_1[\neg_1[\mathbb{Q}_1]] \equiv \mathbb{Q}_1 \boxtimes [\mathbb{Q}_1 \boxtimes \mathbb{Q}_1] = \\ &= \mathbb{Q}_1 \boxtimes [\mathbb{Q}_1 \boxtimes \mathbb{Q}_1] = \mathbb{Q}_1^1 \boxtimes [\mathbb{Q}_1^2] = \mathbb{Q}_1 \boxtimes [\mathbb{Q}_1 \boxplus \mathbb{Q}_{1+1}] = \mathbb{Q}_1 \boxtimes [\mathbb{Q}_1 \boxplus \mathbb{Q}_2] = \\ &= [\mathbb{Q}_1 \boxtimes \mathbb{Q}_1] \boxplus [\mathbb{Q}_1 \boxtimes \mathbb{Q}_2] = [\mathbb{Q}_1 \boxplus \mathbb{Q}_{1+1}] \boxplus [\mathbb{Q}_2 \boxplus \mathbb{Q}_{2+1}] = \mathbb{Q}_1 \boxplus \mathbb{Q}_2 \boxplus \mathbb{Q}_2 \boxplus \mathbb{Q}_3 \\ &= \mathbb{Q}_1 \boxplus \mathbb{Q}_2 \boxplus \mathbb{Q}_3. \end{aligned}$$

In the above calculation we applied a “distributive” rule for multiplication over addition, as well as another general rule of our rules-system for dialectical arithmetic, namely ‘ $\vdash [\forall n \in \mathbb{N}][\mathbb{Q}_n \boxplus \mathbb{Q}_n = \mathbb{Q}_n]$.’

You can read off this rule as “for every Natural number, n, \mathbb{Q}_n , added to itself, yields just \mathbb{Q}_n ”, and no more/no other.

The ‘self-sum’, or ‘self-addition’, $\mathbb{Q}_2 \boxplus \mathbb{Q}_2 = \mathbb{Q}_2$ is an individual instance of this general rule. This feature of the

$\mathbb{N}\mathbb{Q} \equiv \{\mathbb{Q}_n\}$ ‘meta-numbers’ is called “‘additive idempotency’” [Note: The ‘*pre-subscript*’ of symbol ‘ $\mathbb{N}\mathbb{Q}$ ’, namely ‘N’, identifies the $\mathbb{N}\mathbb{Q}$ ‘*meta*’-numbers’ as being built up upon the basis of the standard “Natural” *numbers*, N].

This latter, addition, rule, is one which our dialectical-categorical arithmetic shares with the [revised] Boolean-algebraic “class” arithmetic -- i.e., with its idempotent addition rules $\mathbf{0}_B + \mathbf{0}_B = \mathbf{0}_B$ and $\mathbf{1}_B + \mathbf{1}_B = \mathbf{1}_B$ -- notwithstanding the fact that the multiplication rule for our “categorical arithmetic” is so crucially different from that for this Boolean “class” arithmetic. The “Boolean algebra” of the latter was classically used for modeling formal logic, and is presently used also, e.g., in engineering design, to model the logic of ‘0/1’ based, or “digital”, electronic computer circuitry.

The intuitive idea behind this rule for ‘dialectical’ categorical addition’ is that more than one “copy” of any given ‘category-symbol’ is *more than* enough -- is redundant, as in a pleonasm. One “copy” suffices for purposes of this ‘category arithmetic’, or ‘calculus of categorial combinatorics’. Hence, multiple occurrences, in the same ‘meta-model’, of the same ‘category-symbol’, in the same ‘stage-cumulum’ of “summed”/“co-present” ‘category-symbols’, are all removed, except for a single occurrence of that, otherwise pleonastic, ‘category-symbol’.

We have seen, above, a pair of individual instances that “inductively” suggest a general pattern.

We saw that $\mathbb{Q}_{11}^2 = \mathbb{Q}_{11} \boxplus \mathbb{Q}_{12}$, i.e., that self-multiplication of \mathbb{Q}_{11} yields a “non-amalgamative” sum, or “series”, of 2 quality-distinct, even possibly qualitatively *opposed*, ‘category-symbols’, $\mathbb{Q}_{11} \boxplus \mathbb{Q}_{12}$, but with consecutive subscripts.

We have also seen above that the $\mathbb{Q}_{11}^3 = \mathbb{Q}_{11} \boxtimes \mathbb{Q}_{11} \boxtimes \mathbb{Q}_{11} = \mathbb{Q}_{11} \boxplus \mathbb{Q}_{12} \boxplus \mathbb{Q}_{13}$, dual self-multiplication of \mathbb{Q}_{11} yields a “non-amalgamative” sum, or “series”, of 3 quality-distinct, even possibly quality-distinct *opposing*, generic ‘category-symbols’, again with consecutive subscripts: $\mathbb{Q}_{11} \boxplus \mathbb{Q}_{12} \boxplus \mathbb{Q}_{13} \boxplus \mathbb{Q}_{11} \boxplus \mathbb{Q}_{12} \boxplus \mathbb{Q}_{13}$.

Does this pattern hold generally?

Yes. It is a theorem of our NQ dialectical arithmetic that $\mathbb{Q}_{11}^n = \mathbb{Q}_{11} \boxplus \dots \boxplus \mathbb{Q}_{1n}$, for the NQ “space”, or set, of ‘meta-numbers’. The generic statement, both encompassing & exceeding these two special cases, of \mathbb{Q}_{11}^2 and of \mathbb{Q}_{11}^3 , is: ‘The «arché» category-symbol, raised to a power n in N, produces the sum of the first n category-symbols of NQ’, or:

$$\blacksquare [\forall n \in \mathbf{N}] [\mathbb{Q}_{11}^n = \mathbb{Q}_{11} \boxplus \dots \boxplus \mathbb{Q}_{1n}] \blacksquare^1$$

[English translation: Any natural number power/superscript, n, of the NQ «arché» ‘category-symbol’, \mathbb{Q}_{11} , is equal to the subscript of the largest-subscript ‘category-symbol’ term of the consecutive ‘category-symbols’ sum or series expansion of that, nth, power of the «arché» ‘category-symbol’. The first ‘category-symbol’, raised to a natural number power of n, generates a consecutive sum, or series, of the first n ‘category-symbols’, the first included. The underscored “ellipsis dots”, ‘...’, indicate a consecutive series of terms, i.e., what we call a[n] ‘archéonic’ consecuum’. The proven status, i.e., the theorem status, of this assertion is indicated by the facing, mutually-mirroring, thus ‘mutually-asserting’ assertion signs, ‘ $\blacksquare \dots \blacksquare$ ’. For a proof of this theorem, see --

http://www.dialectics.org/dialectics/Applications_files/F.E.D.,%20Dialectical%20Pictography,%20I.,%20Systematic%20Dialectics,%20Parts%20I-IX,%2018MAY2008_OCR.pdf].

You can read off this deductively derived rule statement as: “For every Natural number, n, when ‘category-symbol’ \mathbb{Q}_{11} is raised to the power n, this power expression is equal to a “non-amalgamative” sum, that is, to a ‘non-reductive’² consecutive series, from \mathbb{Q}_{11} to \mathbb{Q}_{1n} , inclusive.”

That is, this sum will consist of a count of n quality-distinct ‘category-symbols’, starting with the first ‘category-symbol’, \mathbb{Q}_{11} , itself, and ending with the nth ‘category-symbol’, \mathbb{Q}_{1n} , and with every consecutive-

Natural-number-subscripted ‘category-qualifier’ with Natural-number-subscript strictly between 1 and n also “non-amalgamatively” summed, together with, and, by convention, in ordinal order between, \mathbb{Q}_{11} and \mathbb{Q}_{1n} .

¹[For a fuller rendition of the axioms on the basis of which such theorems are proven, see --

http://www.dialectics.org/dialectics/Briefs_files/Hermes_de_Nemores.F.E.D._Preface_to_New_Guest_Author_E.D._Brief_5,revision,posted_20FEB2013.pdf].

²[This “translation” is strictly true only for n > 1. For n = 1, we get the ‘reductive sum’ $\mathbb{Q}_{11}^1 = \mathbb{Q}_{11} \boxplus \dots \boxplus \mathbb{Q}_{11} = \mathbb{Q}_{11}$, per the idempotency axiom given above.].

How the **NQ** Dialectical Ideography Captures Hegel's "Algorithm": Three Application Examples. Our next task is to see how this 'dialectical ideography' is -- how the generic, almost-uninterpreted 'category-symbols' of this postulated arithmetical rules-system, just described above, are -- able to capture, and in a unified manner, **7** of the "algorithmic" features of dialectic that we find in Hegel's account, quoted above, of what we call his "algorithm" for the dialectic. We want to show you this by means of three specific narrations, of some much more interpreted applications of that generic 'dialectical algorithm', and of this generic dialectical arithmetic, to **3** specific, disparate cases of dialectic. Let us first apply, and test, this arithmetic, and its algebra, by using it to model an exemplary non-Hegelian instance of dialectic -- or at least to modeling a non-«*Wissenschaft der Logik*» instance of dialectic, however much [or however little] various commentators may see it as related to Hegel's «*Wissenschaft der Logik*» dialectics.

Example 1 of 3: The Dialectic of Marx's «*Das Kapital*». The instance of dialectic that we have chosen for our first such example is that of a 'human-nature-al', *psycho-socio-political-economic* dialectic, as presented in the opening chapters of a world-famous text by a self-professed follower of Hegel, albeit a highly critical follower of Hegel. This dialectic is that of the category "«**Commodities**»", vis-à-vis that of "«**Monies**»", etc., in the work «*Das Kapital*», by Karl Marx. As a model of key aspects of the content of Marx's «*Das Kapital*», the model presented below must also be a model of key aspects of the Table of "CONTENTS" of Marx's masterwork, as we shall see in the sequel.

'Meta-«*Dynamis*»' * **0**. Re-Affirmation of the Given Opening Category, or «Arché», Feature ["«*First Determination*»"]. For this exemplary demonstration, we will "interpret" the generic first 'category-symbol', \mathbb{T}_1 , to stand for, specifically,

Marx's opening, «*arché*» category, that of **Commodities**, which we shall denote, ideographically, by \mathbb{C} , or, equivalently, by \mathbb{C} . We express this "interpretation", or "assignment", ideographically, by using our 'generic to synchronic'

assignment symbol, ' $\mathbb{C} \rightarrow \mathbb{T}_1$ ', so as to associate Marx's opening specific category, **Commodities**, \mathbb{C} , in the presentational

context, or synchronic context, of dialectic, with/to \mathbb{T}_1 , our opening generic 'categorical qualifier', viz.: $\mathbb{T}_1 \mathbb{C} \rightarrow \mathbb{C}$.

When we interpret a generic category-representing 'meta-numeral', like \mathbb{T}_1 , as representing, for the application at hand, a

specific category, like **Commodities**, we typically select a single letter from out of the name of that category -- usually that name's first letter -- as being a letter which is mnemonic with respect to the full name of that category, i.e., as a "character" which is "character-istic" of that category. Note also the "immediacy" of the **Commodities** category for *modern capitalism*. The individual commodity, & assemblages of commodities, of different kinds, as well as inventories of commodities all of the same kind -- and not capital directly or "immediately" -- is the form in which the capitalist system is sensuously encountered, a form which confronts the modern social individual on the human scale, the scale of direct human experience.

We then take that single character, ' \mathbb{C} ', as the [post-]subscript for ' \mathbb{C} ', the synchronically-interpreted version of the first of the ' \mathbb{T}_1 ' generic 'category-qualifiers', namely ' \mathbb{T}_1 '. That is, in this, synchronic, case, we use this more specific, more

interpreted term, ' \mathbb{C} ', for, and in place of, generic ' \mathbb{T}_1 '. This case is one of 'synchronic dialectics', i.e., of 'systematic dialectics', or of 'presentational dialectics'. We use ' \mathbb{C} ' to model a 'present-ation' of a present totality/realm of shared,

contemporary human experience, a totality that is also produced and reproduced by we humans. In this example, that present totality of our experience is named "«*modern capitalism*»". We call the opening of this 'algorithmic-heuristic presentation' of the contemporary 'capitals-system' by the name 'meta-«dynamis»' **0**, because this «*arché*» symbol, or "starting" 'category-symbol' itself, ' \mathbb{C} ', is the only output or result of raising this "starting" 'category-symbol' to the

"starting" 'meta-power' value, or 'meta-exponent' value, namely, to the **0** 'meta-power': $\mathbb{C}^{2^0} = \mathbb{C}^1 = \mathbb{C}$.

*[Note: «*Dynamis*» is the ancient Greek word meaning "power". By a 'meta-«*dynamis*»', we mean a 'meta-power', or 'meta-exponent', that is, a 'power of a power', or an 'exponent of an exponent'. «*Dynamis*», or «*dunamis*», in general, connotes the power, the drive, that derives from the 'intra-duality', the internal opposition or 'self-opposition', the 'self-antithesis', the 'in[ternal]-tension' of things, their 'indiv[isible]-duality', their 'immanent duality', or "«*internal contradiction*»", grasped as "«*self-contradiction*»", whether diachronically, e.g., as a physical 'self-duality', or, synchronically, e.g., as the "«*left out*»" that is implicit within, immanent in, a category. The root cause of dynamism is 'inner self ferment', "«*internally self-ravaged ground*»", or grounding, 'intra-dueling' of physical eventities', & of [their] mental eventities', categories. Thus, each degree, each level, each above-zero value, of this 'meta-«dynamis»', is the result of a cognized 'self-split', of a cognized 'self-bifurcation', implicit in the earlier-evoked category/'categories-cumulum', whose explicit evocation into is modeled by self-multiplication, or "squaring", of the representation of that category or 'categories-cumulum'. «*Dynamis*» expresses, externally, internal 'not-ness', or 'not-self-ness'; the otherness within].

‘Meta-«Dynamis»’ 1. Evocation of the ‘First Contra-Category Feature’ [“‘Second Determination’”]. We represent the *cognitive movement/activity* of *our critical reflection upon*, or ‘self-reflexion’ of, that category, \mathfrak{Q}_c , algebraically, as -- $\mathfrak{Q}_c^{2^0} = \mathfrak{Q}_c^1 \rightarrow \mathfrak{Q}_c^{2^1} = \mathfrak{Q}_c^2 \equiv \mathfrak{Q}_c \mathfrak{Q}_c = \mathfrak{Q}_c \text{---}\oplus\text{---} \mathfrak{Q}_c$. The presentational version of the arrow sign, ‘ \rightarrow ’, signifies ‘presentational progress’, or progression, read off as ‘*goes, next, to*’. The ‘oppositional addition’ sign, ‘ $\text{---}\oplus\text{---}$ ’, signifies a “*non*-amalgamative” adding together [‘ \oplus ’], or ‘*explicit co-presence*’, of ‘category-symbols’ that denote *qualitatively opposite*, or at least *unequal*, ‘*determinately different*’ [‘ --- ’], categories. We interpret the ‘*act*-ive’ symbol-formation ‘ $\mathfrak{Q}_c \mathfrak{Q}_c$ ’, or ‘ $\mathfrak{Q}_c \text{---}\oplus\text{---} \mathfrak{Q}_c$ ’ -- i.e., such that $\mathfrak{Q}_c \equiv \mathfrak{Q}_c$ -- as connoting an “‘immanent *«aufheben»*-negation”¹, i.e., a “‘*self*-critique””, by \mathfrak{Q}_c , of \mathfrak{Q}_c *itself*, in regard to category \mathfrak{Q}_c as rendering an adequate, complete, or “ultimate” accounting for, or description of, the *Domain* of Capitals, «*K.*», i.e.; for the ‘*Capitals-System*’ of contemporary *human* ‘psycho-socio-political-economics’. Instead of writing ‘ \mathfrak{Q}_{c+c} ’ to represent the “‘sum”” of subscripts from a known-meaning ‘category-symbol’, like \mathfrak{Q}_c , we simply juxtapose, as with Roman numerals, the *two* occurrences of the same ‘[post-]subscript’: \mathfrak{Q}_{cc} .

This forms an initially *unknown*-meaning ‘category-symbol’, i.e., an “*algebraic*” ‘category-symbol’, needing to be “solved-for”, as to its most fitting meaning, in terms of *our experiential knowledge* of this ‘*Capitals-System*’.

So, using ‘ \mathfrak{Q}_c ’ to signify the ‘inter-assignment’ of *generic-to-synchronic-/systematic-dialectical* representations, and, again, using ‘ $\text{---}\oplus\text{---}$ ’ to signify the “*non*-amalgamative” addition of ‘category-symbols’ representing *two* *qualitatively different*, *determinately different*, even *qualitatively opposite* categories, we already know that --

$$\mathfrak{Q}_1[\mathfrak{Q}_1] = \mathfrak{Q}_1^2 = \mathfrak{Q}_1 \oplus \mathfrak{Q}_{1+1} = \mathfrak{Q}_1 \oplus \mathfrak{Q}_2 \hookrightarrow \mathfrak{Q}_c^{2^1} = \mathfrak{Q}_c^2 \equiv \mathfrak{Q}_c \mathfrak{Q}_c = \mathfrak{Q}_c \text{---}\oplus\text{---} \mathfrak{Q}_{cc}.$$

Our next task, is, thus, to “solve for” the meaning of this new -- at first “algebraic”, “*unknown*” -- term, \mathfrak{Q}_{cc} . Our task is also to do so based on, & building upon, the already known, “‘given””, stipulated meaning of our «*arché*»-category, \mathfrak{Q}_c .

In *our* experience, an “interpreted” [or “applied”] ‘category-symbol’, “applied” to model a specific *Domain*, and of the form \mathfrak{Q}_{xx} , typically, if not always, can be solved as signifying an «*aufheben*» ‘*meta-unit-ization*’².

This «*aufheben*» *character*, or *simultaneous cancellation/elevation/preservation character*, of what such a ‘category-symbol’ symbolizes, is what makes it a part of a *dialectical model* in the *first* place.

That is, a ‘category-symbol’ of the form \mathfrak{Q}_{xx} typically signifies a “‘meta-category””, but *not* in the sense of a ‘category of categories’. A ‘category-symbol’ of form \mathfrak{Q}_{xx} typically signifies a category *each* of whose units, or “logical individuals”, is made up out of a heterogeneous multiplicity of [some or all of the] units of an earlier/‘priorly’-evoked category, denoted by \mathfrak{Q}_x . That is, *each* unit inherent in category \mathfrak{Q}_{xx} is typically a ‘meta-*X*’ unit, i.e., a ‘meta- \mathfrak{Q}_x ’ unit, *each* one combining into itself a heterogeneous *multiple* of units of the category symbolized by \mathfrak{Q}_x . The units of category \mathfrak{Q}_{xx} are «*aufheben*»-ations’, i.e., are *simultaneous cancellation/elevation/preservation*-built ‘*meta*-units’, of some/all units of category \mathfrak{Q}_x . Applying this solution rule to our *first* “unknown”, “algebraic” ‘category-symbol’ of this example, i.e., to \mathfrak{Q}_{cc} , *we* expect that it might stand for a category of ‘*Meta-Commodities*’. That means a category *each* one of whose *units*, «*monads*», or “logical *individuals*”, is made up out of a heterogeneous multiplicity of [some or all of] the individual commodity units that also *directly* make up the earlier-positing category, the *opening*, “‘*given*””, «*arché*» category, the category named *Commodities*.

¹[With ‘ \mathfrak{Q}_c ’ as the *specific synchronic*, presentational version of ‘ \mathfrak{Q}_1 ’, the *generic*, «*arché*» ‘*aufheben*» *determinate negation* operator’, equivalent to \mathfrak{Q}_1 .].

²[This *dialectical* process/relation, or «*aufheben*» process/relation, of ‘*meta-unit-ization*’, might also be termed, in terms of Arthur Koestler’s “holon” theory, ‘*meta-holon-ization*’. See: Arthur Koestler, *The Ghost in the Machine*, New York: Arkana, 1989, Chapter III, pp. 45-58, *et passim*.].

In this **first example**, to successfully solve **it**, we must take into account the existence of **h**uman **psyche**s, as we must do, in general, for any **D**omain which, like that of a **h**uman **psycho**-socio-political-economic system, subsumes **h**uman collective **action**; **h**uman, **psyche**s-involving collective **praxis**. In this case, the [Marxian] category of '**Monies**' comes to **mind**, as a candidate solution to the problem of finding a fitting meaning for our **second**, algorithmically-generated, & initially of **un**known-meaning, or “‘algebraic’”, ‘category-symbol’, \mathfrak{Q}_{CC} .

It comes to **mind** because, in the **minds** of the typical **h**uman agents whose life-activity conducts/enacts, &, indeed, **constitutes**, the ‘Capitals-System’ of ‘**psycho**-socio-political-economics’, each unit of money represents, at root, an exchange value, & an ‘exchange-potential’. Each such unit represents the, today, *vast* list of the commodities for which that unit of money can form a part of the **price** that will **buy**, which will be accepted [e.g., as “legal tender” for, or] as equivalent in exchange for, each commodity listed in that [broadly **shared**, **intersubjective**] **mental** list, that comprehensive “price-list”. That, **we** hold, is the essence of Marx’s “Money-Form” of value.* So, **we** [re]**solve** [$\vdash \equiv$], i.e., by “‘signing’” **definition** [\equiv] **assertion** [\vdash] the “‘algebra’” of this ‘category-symbol’, of initially **un**known meaning, \mathfrak{Q}_{CC} , as aptly modeling the meaning of the already **known**-to-us [Marxian] category of '**Monies**' -- $\mathfrak{Q}_{CC} \vdash \equiv \mathfrak{Q}_M \equiv M$.

The ‘category-symbol’ \mathfrak{Q}_{CC} represents the ‘ \mathfrak{Q}_C -critique’, or the ‘**C**-critique -- the ‘**self**-critique’ -- of \mathfrak{Q}_C or of **C**: the “immanent” critique of **C**. That is, this is a critique of \mathfrak{Q}_C that is “internal” to, *and consistent with*, \mathfrak{Q}_C .

‘Category-symbol’ \mathfrak{Q}_{CC} represents the result of **our** reflection upon **C**, when **we** hold **C** in **mind**, as Marx presents it, and analyzes it, and confront it with **our**, albeit “chaotic”, **experience** of the Capitals **D**omain entire.

“**Our**” critique of \mathfrak{Q}_C or **C**, as purporting to complete the description of **capitalism**; to exhaustively explain the totality of **our** daily-life **experience** of, and **as**, the **phenomena** of **capitalism** -- both of the **capitalism** of Marx’s historical present time, and, **we** hold, also, still to a great degree, of the **capitalism** of **our** own historical present time -- is notated, in **our** shorthand, as $\mathfrak{Q}_C^1 \rightarrow \mathfrak{Q}_C^2 \equiv \mathfrak{Q}_C \mathfrak{Q}_C \equiv \mathfrak{Q}_C \mathfrak{Q}_C \equiv \mathfrak{Q}_C \mathfrak{Q}_C$.

This “squaring with itself” of \mathfrak{Q}_C has yielded \mathfrak{Q}_C itself again, as the **first** part, the **first** term, of its **dual** yield.

‘Category-symbol’ \mathfrak{Q}_C comes back in this ‘self-product’ of \mathfrak{Q}_C , in this product of \mathfrak{Q}_C with itself, because \mathfrak{Q}_C still categorizes a part of the content of **our** present **experience** of **capitalism**, such that \mathfrak{Q}_M cannot *completely* displace \mathfrak{Q}_C .

But, given **our** solution, $\mathfrak{Q}_{CC} \vdash \equiv \mathfrak{Q}_M \equiv M$, the expression $\mathfrak{Q}_C^1 \rightarrow \mathfrak{Q}_C^2 \equiv \mathfrak{Q}_C \mathfrak{Q}_C \equiv \mathfrak{Q}_C \mathfrak{Q}_C$ also yields a **second** part, a **second** term, $\mathfrak{Q}_M \equiv M$, as “oppositionally added” [\dashv] to \mathfrak{Q}_C , added into our now growing ‘categories-cumulum’, as a ‘supplementary contrary’, or as a ‘contrary supplement’, to $\mathfrak{Q}_C \equiv C$.

The '**Monies**' category already, **h**umanly exists for the “slice” of historical time covered by Marx’s “‘systematic dialectic’” of «**Das Kapital**».

That category is already “in” the collective **h**uman **mind**, and in collective **h**uman **practice**, throughout that slice of contemporary **social** time -- of, broadly, *present*, **capitalist** time -- that Marx is presenting, via his unique “‘systematic dialectic’” method of presentation, in his world-historical treatise, «**Das Kapital**».

*[Karl Marx, «**Das Kapital**», volume I, *Chapter I*, Section 3., sub-section D., New York: New World, 1967, pp. 69-70. For this text in HTML format, via web archive, see -- <https://www.marxists.org/archive/marx/works/1867-c1/ch01.htm#S3d>].

And **units** of the **Commodities** category are already, presently embedded -- “contained” in the **intersubjective**, ‘**human-phenomic**’, **mental** [‘**psychē-ic**’] way that we have described above -- in each of the **units** of that ‘**Monies**’ category. Marx **began** with the **Commodities** category, one already long-since forged by the daily **activity** and **experience** of **capitalist humanity**. But the sights of Marx’s readers are raised by the process of their apposite reception of his dialectical-analytical presentation.

That presentation recalls, it brings into **mental** focus, next, and **also**, the ‘**Monies**’ category, a category likewise having already been forged, **collectively**, long-since, in **its** daily life practice, and **experience**, by “**modern**”, or **capitalist, humanity**. It evokes this **second** category, of ‘**Monies**’, **not** “chaotically”, but in systematic order, in ‘systematic ordinality’, or ‘consecutivity’, revealing the **interconnexion**, the «**aufheben**», ‘**meta-unit-ic**’, and ‘supplementary opposite’ **relation**, that exists, for **us**, between the category of **Commodities** and the category of ‘**Monies**’.

And it does so without “abstractly negating”, absolutely denying, or converting into **abstract nothingness**, in **one’s mind**, that earlier-presented, **Commodities**, category. That earlier-presented, **Commodities** category is **doubly** «**aufheben**»-**conserved**, both **inside** the **units** of the **Monies** category, and **outside** of **them**, in the **result** of **its self-critique**, i.e., of **its** «**aufheben**», **immanent, self-negation**: $\underline{C} \rightarrow \underline{C}(\underline{C}) \equiv \underline{C}(\underline{C}) \vdash \equiv \underline{C} \dashv \underline{C} \vdash \underline{M}$.

The latter category, ‘**Monies**’, is a category that **we** already know, whose **phenomena** **we** have already -- and ‘immersively’ so, to the point of a kind of, **modernly** epidemic, “‘PTSD’” -- **experienced**, at least “chaotically”. But Marx’s systematic-dialectical presentation reveals how money is logically, presently, and **also past-historically, seeded** in commodities: ‘**Commodities** are the root of all **Monies**’. That presentation reveals an ‘**ideo**-meta-genealogy’, or ‘**memeo**-meta-genealogy’, of ‘**Monies**’; how the ‘**Monies**’ category is evoked via Marx’s critical, **dialectical** analysis of the **Commodities** category. This **synchronic-dialectical** analysis also points back [in]to the long, deep past, to the **diachronic, historical-dialectical** [‘→’, ‘↖’, ‘↗’, ‘↔’, ‘⊕’] “differentiation of commodities into commodities and money”¹ [in the course of the **historical-dialectical** ‘meta-evolution’ of the **human-social relations of** [human-societal self-re-]production] --

$$\underline{C} \rightarrow \underline{C}(\underline{C}) \equiv \underline{C}(\underline{C}) \vdash \equiv \underline{C} \dashv \underline{C} \vdash \underline{M}$$

In summary, we have seen how **our** self-reflection and self-critique of category **C** -- conducted by and in **our minds**, as guided by Marx’s presentation -- regarding **C** as purporting to complete the description of **our experience** of the **modern** ‘Capitals-System’, has yielded, yes, **C** itself again, as a partially valid component of such a more complete description/explanation. But it has also yielded a next, **second, qualitatively different**, “‘**counter-example**’” category, **M**, as “added”, oppositionally [‘⊖’], and ‘supplementarily’, to the **first** category, i.e., to **C** --

$$\underline{C} \rightarrow \underline{C}(\underline{C}) \equiv \underline{C}(\underline{C}) \equiv \underline{C}^2 \vdash \equiv \underline{C} \dashv \underline{C} \vdash \underline{M}$$

Money, in its relation to commodities, is evoked, is “teased out” of its present **implicitude** in commodities, by Marx’s analysis of commodities: **(§1)** [Hegel:] “‘... Within every simple first determination what is determinately different from it... is at once also present [HdN: E.g., in **mind**, in **memory**, and in **experience**], but it is at first present without being **explicitly** posited’”. Money is already, ‘**modernly**’, present, & **implicitly** “‘contained’” [‘⊂’], in commodities: ‘**M** ⊂ **C**’. Now, as of presentation-step **#1** [i.e., as of ‘**meta-dynamis**’ **1**] in this modeled presentation, it is also “**explicitly** posited”. Rephrasing this in terms of Hegel’s “‘algorithm’” for **dialectic**: **our “first determination”**, **(§1)**, of Capital, of **Domain** «**K**», is **C**, **Commodities**.

That symbol, **C**, represents the “‘immense accumulation of commodities’”² that **we first** encounter, in and as **our** most **immediate experience** of ‘The Capitals System’ -- the most direct, local, & tangible manifestation of the very existence of the ‘Capitals-System’ to **our personal perceptions**. Such commodities are typically, though not invariably, commodities owned by one or more “individual capital” enterprise, belonging to one or more individual ‘**Commodities-«Kapitals»**’ inventory. But this more concrete, more determinate, «**Kapitals**» aspect of capitalist **Commodities** production is not made explicit until much later in a systematic-dialectical presentation of the ‘Capitals-totality’. In the case of Marx’s «**Das Kapital**», **it** is not evoked and made fully **explicit** until volume II, Chapter **III**. In this Example **1** ‘meta-model meta-equation’ for such a presentation, **this category** is not evoked until **step** **S = 3**, via ‘category-symbol’ **#5**.

¹[Karl Marx, «**Das Kapital**», Volume I, Chapter III, Section 2., sub-section a., paragraph #1, New York: New World, 1967, pp. 103-104.].

²[Karl Marx, opening sentence of «**Das Kapital**» -- <https://www.marxists.org/archive/marx/works/1867-c1/ch01.htm#S1>].

The “**second** determination”, (§2), for the ‘Capitals-System’, is **M**.

The latter ‘category-symbol’ denotes the category of ‘**Monies**’, the element of the **Domain** of Capitals, “posited in its differentiation from the first” -- posited in its differentiation from Marx’s first category, of **Commodities**.

Each **unit** of the **Monies** category is an «**aufheben**» ‘**meta-unit**’ of/to/for **units** of the **Commodities** category.

Each **Monies unit** is a concurrent **negation/elevation/conservation** of **Commodities units**, each **Monies unit** «**aufheben**» “‘containing’”, in the ‘**psychē**-ic’ way that we have discussed above, the **mental** “‘price-list’” of the **Commodities units** which this **Monies unit** can help to buy, can form part of the **price** for **their** purchase.

Thus, each **Monies unit** is a ‘**meta-Commodities**’ **unit**, each **one** “‘**made up**’” out of a **heterogeneous multiplicity** of **Commodities units**. The **Monies** category is thus **supplementary** to the **Commodities** category. The **Monies** category is also a ‘**not-Commodities**’ category, a **qualitative** opposite, in that sense, and a **counter-example**, refuting the **implicit** claim of the **Commodities** category to exhaustively **comprehend** the **qualitative** elements of the ‘**capitalism experience**’.

Commodities are now also, and **explicitly** so, “‘contained’” in **Monies**, as Marx has evoked it: ‘**C** \sqsubset **M**’; ‘**M** \supset **C**’.

But how, then, do we get to the “third determination” of capitalism: (§3) “‘The third determination is the **unity** of the first and second, in which the contradiction [HdN: E.g., the opposition] is **resolved**.’”?

‘**Meta-«Dynamis»**’ 2. «**Dynamis**» 3. **Evocation of the ‘First Uni-Category Feature’** [“‘**Third Determination**’”].

Well, first, note that the “contradiction” relation, e.g., the **synchronic** ‘mutual negation’, **qualitative** opposition [‘ \leftrightarrow ’] relation, between **Commodities** and **Monies**, which we notate as ‘**C** \leftrightarrow **M**’, is of a **special** kind with regard to the kinds of opposition that may immediately come to **mind** for many of **us**.

The opposition ‘**C** \leftrightarrow **M**’ is **not** an instance of the “[mutually] **annihilatory**” kind of opposition, such as the opposition between corresponding units of the categories of “matter” & of “anti-matter”, e.g., “**p**rotons” vs. “**a**nti-**p**rotons” [‘**p** \downarrow **a**’].

Nor is it an example of the “**complementary**” kind of opposition, such as that among the individuals of the categories of “**w**omen” and of “**m**en” [‘**w** \supset **m**’].

It is, on the contrary, an instance of a perhaps less familiar kind of opposition. **We** call it [**synchronic**] ‘**supplementary**’ opposition [‘ \leftrightarrow ’]. The units of money “‘oppose’” the units of commodities, in transactions of exchange-value exchange, i.e., of “**C—M**” [selling, or “alienation”] & “**M—C**” [buying], as notated by Marx. But money units also, as we saw above, **cognitively**, **memetically**, **explicitly** “‘contain’” [‘ \sqsubset ’], in the **minds** of their **human enactors, agents, & personifications**, the whole manifold of diverse commodity-units, each of which commodity-units those money-units, if present in the requisite, i.e., in **price**, quantities, can, potentially, “buy”; “**M—C**”: ‘**M** \leftrightarrow **C**’ & ‘**M** \supset **C**’; ‘ $\mathfrak{C}_M \supset \mathfrak{C}_C$ ’; ‘ $\mathfrak{C}_{CC} \supset \mathfrak{C}_C$ ’.

Now, Hegel, above, described the **third** category -- the “third determination” -- as “the unity of the first and second” determinations, i.e., as a category, “in which the contradiction [HdN: E.g., the opposition between them] is resolved”. “‘Algebraically’”, we can generate a **third** new ‘category-symbol’, describing such “unity” and “resolution”, via a **Commodities** ‘category-symbol **meta-«dynamis»**’ value, or ‘meta-exponent’ value, of **2** --

$$\begin{aligned} \mathfrak{C}_C^2 &\approx \mathfrak{C}_C^4 = (\mathfrak{C}_C^2)^2 \models \equiv (\mathfrak{C}_C \oplus \mathfrak{C}_M)^2 = (\mathfrak{C}_C \oplus \mathfrak{C}_M) \otimes (\mathfrak{C}_C \oplus \mathfrak{C}_M) = \\ &(\mathfrak{C}_C \oplus \mathfrak{C}_M) \oplus (\mathfrak{C}_M \oplus \mathfrak{C}_C) \oplus (\mathfrak{C}_C \oplus \mathfrak{C}_M) \oplus (\mathfrak{C}_M \oplus \mathfrak{C}_C) = \\ &\mathfrak{C}_C \oplus \mathfrak{C}_M \oplus \mathfrak{C}_M \oplus \mathfrak{C}_C \oplus \mathfrak{C}_C \oplus \mathfrak{C}_M \oplus \mathfrak{C}_M \oplus \mathfrak{C}_C, \text{ since, by our rules, } \mathfrak{C}_{CM} = \mathfrak{C}_{MC}, \text{ syntactically [albeit with key} \end{aligned}$$

semantic, connotative differences, the one ‘**explicitizing**’ what the other leaves **implicit**, and vice versa].

The above is our *specific* form, as interpreted for, or applied to, the Capitals Domain, of the *generic* --

$$\begin{aligned} \mathbb{Q}_1^{2^2} &\approx \mathbb{Q}_1^4 = [\mathbb{Q}_1^2]^2 = [\mathbb{Q}_1 \text{---} \mathbb{Q}_{1+1}]^2 = [\mathbb{Q}_1 \text{---} \mathbb{Q}_2] \otimes [\mathbb{Q}_1 \text{---} \mathbb{Q}_2] = \\ &[\mathbb{Q}_1 \text{---} \mathbb{Q}_2] \text{---} [\mathbb{Q}_2 \text{---} \mathbb{Q}_{1+2}] \text{---} [\mathbb{Q}_1 \text{---} \mathbb{Q}_{2+1}] \text{---} [\mathbb{Q}_2 \text{---} \mathbb{Q}_{2+2}] = \\ &\mathbb{Q}_1 \text{---} \mathbb{Q}_2 \text{---} \mathbb{Q}_3 \text{---} \mathbb{Q}_4, \text{ since } \mathbb{Q}_{1+2} = \mathbb{Q}_{2+1} = \mathbb{Q}_3. \end{aligned}$$

But this expansion evokes also a *fourth*, initially opaque, ‘*algebraic unknown* category-symbol’, \mathbb{Q}_{MM} , which we solve as the «Kapitals» category *itself*, $\mathbb{Q}_K \models \mathbb{Q}_{MM}$, a solution explicated further herein, beyond this sub-section, in Part **II**.

We can also net-generate, “‘algebraically’”, just that *third* new ‘category-symbol’, \mathbb{Q}_{MC} , describing such “‘*unity*” and “*resolution*”, by a Commodities category *double* self-critique [or *double* [self-]negation], «*dynamis*» **3** [“‘stage’” **3**], once again critiquing Commodities as containing a purported complete specification and comprehension of the Capitals Domain --

$$\begin{aligned} \mathbb{Q}_C^3 &= \mathbb{Q}_C \otimes \mathbb{Q}_C \otimes \mathbb{Q}_C \equiv \mathbb{Q}_C (\mathbb{Q}_C \mathbb{Q}_C) \equiv \mathbb{Q}_C \otimes (\mathbb{Q}_C \mathbb{Q}_C) = \\ &\mathbb{Q}_C \otimes (\mathbb{Q}_C \otimes \mathbb{Q}_C) = \mathbb{Q}_C \otimes (\mathbb{Q}_C^2) = \mathbb{Q}_C \otimes (\mathbb{Q}_C \text{---} \mathbb{Q}_{CC}) \models \mathbb{Q}_C \otimes (\mathbb{Q}_C \text{---} \mathbb{Q}_M) = \\ &(\mathbb{Q}_C \otimes \mathbb{Q}_C) \text{---} (\mathbb{Q}_C \otimes \mathbb{Q}_M) = (\mathbb{Q}_C \text{---} \mathbb{Q}_{CC}) \text{---} (\mathbb{Q}_M \text{---} \mathbb{Q}_{MC}) = \\ &\mathbb{Q}_C \text{---} \mathbb{Q}_M \text{---} \mathbb{Q}_M \text{---} \mathbb{Q}_{MC} = \mathbb{Q}_C \text{---} \mathbb{Q}_M \text{---} \mathbb{Q}_{MC} \Leftrightarrow \mathbb{Q}_1 \otimes \mathbb{Q}_2 \otimes \mathbb{Q}_3 \end{aligned}$$

-- which calls, in its *final* term -- its algebraic-*un*known term, \mathbb{Q}_{MC} -- for a new solution.

We already know the meanings of the *first two* terms, \mathbb{Q}_C and \mathbb{Q}_M , from our previous work, above.

The ‘category-symbol’ \mathbb{Q}_C is the stipulated «*arché*», or *starting* ‘category-symbol’, of our categorial progression model of the Capitals Domain. It stands for the category ‘Commodities’.

After “*squaring*” -- self-critiquing -- [the implied adequacy of] category \mathbb{Q}_C to *grasp* the totality of the Capitals Domain, we solved for the *net* result of that critique, \mathbb{Q}_{CC} , as \mathbb{Q}_M , standing for the category ‘Monies’.

Using \mathbb{Q}_C , once again, to critique/negate, this time, a “‘sum’”, or ‘cumulum’, of **2** ‘category-symbols’, viz., $\mathbb{Q}_C \text{---} \mathbb{Q}_M$, a “‘sum’” that resulted from that *first* critique -- of \mathbb{Q}_C , by \mathbb{Q}_C -- we obtained an expanded, *tripartite*, *triadic* ‘categorial cumulum’ of so-modeled ‘ideo-physio-ontology’ -- $\mathbb{Q}_C \text{---} \mathbb{Q}_M \text{---} \mathbb{Q}_{MC}$. In such *triadic* iterations, each successive ‘category-symbol’ inherits, in effect, all previously-evoked, named determinations, while also *explicitly* positing/adding more such determinations, as we shall see, below.

The question before us now is: What can the new term/‘category-symbol’, \mathbb{Q}_{MC} , usefully mean, if anything, in the context of the Capitals Domain?

Well, first off, we may notice that ‘category-symbol’ \mathfrak{Q}_{MC} itself already suggests what Hegel’s “‘algorithm’” calls for next. Hegel’s “‘algorithm’” calls, next, for a unity of, in our example, \mathfrak{Q}_C and \mathfrak{Q}_M . The ‘category-symbol’ \mathfrak{Q}_{MC} seems to “fill the bill”, at least syntactically. It suggests a single category, \mathfrak{Q}_{MC} , that combines the heretofore separate, disparate, ‘supplementarily opposing’ categories/determinations, represented by \mathfrak{Q}_C and/versus \mathfrak{Q}_M .

Moreover, per our standard “‘canons of interpretation’”, \mathfrak{Q}_{MC} connotes “‘the conversion of Commodities units into Monies units’”, that is, “‘the conversion of Commodities into Monies, as catalyzed by Monies’”, which Marx notated as “C—M”, for “sale” [Marx: “alienation”] of (a) Commodit(y)(ies) in return for some sum of Money unit(s) [price].

The interchange -- the “commutation” -- of the two epithet subscripts of \mathfrak{Q}_{MC} , yields \mathfrak{Q}_{CM} . Both \mathfrak{Q}_{MC} and \mathfrak{Q}_{CM} answer, syntactically, to the same generic ‘meta-number’, \mathbb{Q}_3 --

$$\mathfrak{Q}_{MC} \xleftrightarrow{\quad} \mathbb{Q}_{2+1} = \mathbb{Q}_3 = \mathbb{Q}_{1+2} \xleftrightarrow{\quad} \mathfrak{Q}_{CM}.$$

Per our standard “‘canons of interpretation’”, \mathfrak{Q}_{CM} connotes “‘the conversion of Monies units [back] into Commodities units’”, that is, “‘the conversion of Monies into Commodities, as catalyzed by Commodities’”, which Marx notated as “M—C”, representing the “purchase” of (a) Commodit(y)(ies), i.e., by means of/in exchange for some sum of Money.

What if we take the connotations of both of these, *generically* and *syntactically* equivalent, ‘category-symbols’, namely, \mathfrak{Q}_{MC} & \mathfrak{Q}_{CM} , into account, in solving for their meaning, including both for the sale [Marx: “alienation”] of Commodities, in exchange for Money, “C—M”, & the purchase of Commodities “by” Money, “M—C”, combining ‘C—M’ & ‘M—C’?

If we do so, we seem to arrive at, as their unity, “C—M—C”, Marx’s ‘excerpt-formula’¹ for what we shall reference as ‘The Monies-Mediated Circulations of Commodities’. Note that we might also, albeit with only partial accuracy, reference this unity as ‘The Commodities-Mediated “‘Circulations’” of Monies’²: ‘M—C—M’.

Therefore, we solve [‘ $\vdash \equiv$ ’] for the ‘category-symbol’ \mathfrak{Q}_{MC} , and also for its *semantic* ‘intra-dual’, \mathfrak{Q}_{CM} , as standing for the category of the movement or process of ‘The Monies-mediated ciRculations of Commodities’, so central and so vital to the life-process of our ‘Capitals-System’ Domain --

$$\mathfrak{Q}_{MC} \vdash \equiv \mathfrak{Q}_R \equiv \mathbb{R} \equiv \text{‘The } \underline{\text{Monies}}\text{-Mediated } \underline{\text{ciRculations}} \text{ of } \underline{\text{Commodities}}\text{’}.$$

The two earlier-evoked ‘category-symbols’, \mathfrak{Q}_C & \mathfrak{Q}_M , represent categories -- Commodities, & Monies, respectively -- that we might take to be ‘undynamical’, i.e., ‘statical’, “static”.

¹[Excerpted from the ongoing ‘exchange-value exchange’ [‘ \Leftrightarrow ’] circulations-process of modern, capitalist, society -- ... $\Leftrightarrow C \Leftrightarrow M \Leftrightarrow C \Leftrightarrow M \Leftrightarrow C \Leftrightarrow M \Leftrightarrow C \Leftrightarrow \dots$ -- from which the productions-process [of [commodity]-capitals] is still abstracted/elided, i.e., in which that process is still only implicit, and yet is presupposed. It is presupposed because this sequence of interlocking sales and purchases can continue as depicted only thereby. I.e., this can continue, or be reproduced, only via each ‘ $C \Leftrightarrow M \Leftrightarrow C$ ’ segment being, more concretely, that which is depicted by Marx’s [as modified by HdN] unified, combined, “circulations-process” and “productions-process”, partly pictorial ideographical notational paradigm --

$$\dots C \Leftrightarrow M \Leftrightarrow C' [= C + \Delta C] \left\langle \begin{array}{l} \underline{\text{Labor-Power Commodities}} \\ \underline{\text{Other Means/Materials of Production Commodities}} \end{array} \right. \dots P [\underline{\text{Productive Capital}}] \dots C'' [= C' + \Delta C'] \Leftrightarrow \dots$$

-- as Marx evokes it later on in the order of the growing ‘thought-concreteness’, and ‘experience-concreteness’, of content in his systematic-dialectical presentation in ‘Das Kapital’. See, for example, ‘Das Kapital’, volume II, “‘The Circulationsprocess of Capitals’”, Part I, “‘The Metamorphoses of Capital and Their Circuits’”, Chapter III, “The Circuit of Commodity-Capital”, opening sentence, New York: New World, 1967, p. 86.]

²[Per Marx, the “circular movement”, “circuit”, or “circulation” of commodities is accompanied, locally, with a “‘radiation’” of monies. The characteristic form of movement for commodities catalyzed by monies is “circulation”. The characteristic form of motion for monies catalyzed by commodities is what we call “‘radiation’”. See ‘Das Kapital’, volume I, “‘The Produktionsprocess of Capitals’”, Part I, “Commodities and Money”, Chapter III, “Money, or the Circulation of Commodities”, Section 2., “The Medium of Circulation”, sub-section b., “The Currency of Money”, New York: New World, 1967, pp. 111; 114-115.]

Our *third* category, that of ‘The Monies-mediated ciRculations of Commodities’, $\mathfrak{Q}_R \equiv \underline{R}$, in/of/for our categorial-
 progression model, if it is to fulfill Hegel’s ‘*Feature (§4)*’, would have to be the next more -- the *third* more, more than
 the *first* & the *second* -- ‘thought-concrete’, ‘thought-complex’, *features-rich* ‘category-symbol’ in our progression so far.
 It would have to explicitly presuppose & convey more than does either the $\mathfrak{Q}_C \equiv \underline{C}$, or the $\mathfrak{Q}_M \equiv \underline{M}$, ‘category-symbol’.

We can see, *semantically*, already, partly, that this feature is fulfilled, by mere inspection of these **1st 3** ‘category-symbols’.

We can see that \mathfrak{Q}_M , *as* \mathfrak{Q}_{CC} , explicitly involves/“contains” \mathfrak{Q}_C , while also being different from, & “‘more
 than’”, \mathfrak{Q}_C -- that is, while also invoking qualitative features in addition to/beyond what is invoked by \mathfrak{Q}_C .
 Whereas \mathfrak{Q}_C invokes itself -- its own stipulated qualit(y)(ies) -- *alone*.

Likewise, ‘category-symbol’ $\mathfrak{Q}_{MC} \equiv \mathfrak{Q}_R \equiv \underline{R}$ explicitly involves/“contains”, and invokes, the qualities of
 both $\mathfrak{Q}_C \equiv \underline{C}$ and $\mathfrak{Q}_M \equiv \underline{M}$, *combined*. E.g., note that $\mathfrak{Q}_M \sqsubset \mathfrak{Q}_{MC} \supset \mathfrak{Q}_C$.

‘Category-symbol’ \mathfrak{Q}_{MC} signifies something qualitatively different from/‘*supplementarily* opposite’ to ‘category-
 symbol’ \mathfrak{Q}_C , in that it also «*aufheben*»-“‘contains’” ‘category-symbol’ \mathfrak{Q}_M . ‘Category-symbol’ \mathfrak{Q}_{MC} also signifies
 something qualitatively different from/‘*supplementarily* opposite’ to ‘category-symbol’ \mathfrak{Q}_M , in that it also «*aufheben*»-
 “‘contains’” ‘category-symbol’ \mathfrak{Q}_C .

We can see, *syntactically*, that ‘*Feature (§4)*’ is fulfilled, via the following rendering --

$$\mathfrak{Q}_C^3 = \mathfrak{Q}_C \oplus \mathfrak{Q}_{CC} \oplus \mathfrak{Q}_{CCC} \quad \vdash \quad \mathfrak{Q}_1^3 = \mathfrak{Q}_1 \boxplus \mathfrak{Q}_{1+1} \boxplus \mathfrak{Q}_{1+1+1} = \mathfrak{Q}_1 \boxplus \mathfrak{Q}_2 \boxplus \mathfrak{Q}_3$$

-- although this rendering loses, or puts out of direct sight, the [solved] *semantics* of the meanings of categories
 \mathfrak{Q}_M and \mathfrak{Q}_{MC} , i.e., the meanings of the *double* and the *triple* “‘self-involution”¹ of ‘C’ in \mathfrak{Q}_{CC} and in \mathfrak{Q}_{CCC} .

Nevertheless, by this rendering, we see directly that \mathfrak{Q}_C involves the mnemonic epithet/subscript ‘C’ *singly*,
 whereas $\mathfrak{Q}_{CC} \vdash \mathfrak{Q}_M \equiv \underline{M}$ involves ‘C’ *doubly*, and $\mathfrak{Q}_{CCC} \vdash \mathfrak{Q}_{MC} \equiv \mathfrak{Q}_R \equiv \underline{R}$ involves ‘C’ *triply*.

Multiple, side-by-side, apparently merely “additive” occurrences of a subscripted epithet, like ‘C’, in *our*
 categorial-*dialectical* algebra, are *not* redundancies or pleonasms.

On the contrary, in repeated-subscripts-only ‘category-symbols’, the number of repetitions of the repeat
 subscript signifies the degree of “‘self-involution”², or of “‘self-re-entry”², of the units of the category
 represented by the repeated-subscript ‘category-symbol’.

Typically, each *double*-subscript signifies an additional increment of the «*aufheben*» ‘[self-]meta-unit-izations’
 that constitute the higher units of the category described via such a repeated-subscript-only ‘category-symbol’.

¹[As we can see in, e.g., $\mathfrak{Q}_C^2 = \mathfrak{Q}_C \oplus \mathfrak{Q}_{CC} \oplus \mathfrak{Q}_{CCC} \oplus \mathfrak{Q}_{CCCC} \vdash \mathfrak{Q}_C \oplus \mathfrak{Q}_{CC} \oplus \mathfrak{Q}_{CCC} \oplus \mathfrak{Q}_{CCCC}$, such ‘*dyadic* Seldon Function’ categorial progression
 representations develop as an «*arché*» ‘category-symbol’, plus a series of ‘category-symbols’ that are “‘self-involutions” of that «*arché*» ‘category-symbol’ [e.g.,
 $\mathfrak{Q}_{CC} \vdash \mathfrak{Q}_M$, & $\mathfrak{Q}_{CCC} \vdash \mathfrak{Q}_{MM} \vdash \mathfrak{Q}_K$], ‘inter[op]posed’ by intervening mutual ‘*inter*volutions’ among the ‘category-symbols’ for the different degrees of
 “‘self-involution” so far extant among the ‘category-symbols’ so far generated [e.g., $\mathfrak{Q}_{CC(C)} \vdash \mathfrak{Q}_{MC}$, or $\mathfrak{Q}_{C(CC)} \vdash \mathfrak{Q}_{CM}$].

²[For more about the concept of “‘self-re-entry””, see Francisco J. Varela, *Principles of Biological Autonomy*, NY: Elsevier North Holland, 1979, pp. 122-169].

Feature (§5). Does Our **Example Instance** Capture Hegel's **Fifth Feature** of **Generic Dialectic**: “‘**Evoluteness**’”? Hegel's next specification, per our partitioning, in the cited passage, regarding his “‘algorithm’” for **dialectic**, is what we term his assertion of the “‘**evoluteness**’”, as opposed to the “‘**convoluteness**’” [and also as opposed to the ‘**covoluteness**’] of **dialectic**. For more about this “‘**convoluteness**’”/“‘**evoluteness**’”/‘**covoluteness**’ **dialectic**, see --

http://www.dialectics.org/dialectics/Glossary_files/Glossary.The_Dialectic_of_the_'Voluteness'_of_Dialectical_Progressions_in_General.07FEB2014_2.jpg

A “**convolute**” sea shell, for example, is one which, in the course of its, primarily “radial”, self-growth, overlays preceding whorls with successor whorls, so that the latest whorl/layer covers-up, and hides from [horizontal] view, *all* of its predecessor whorls/layers. An “**evolute**” sea shell is one in which shell growth is “vertical” as well as “radial”, so that *all* predecessor whorls remain in [“horizontal”] view with, and despite, the growth of new, successor whorls, i.e., because of the “vertical” aspect of their growth.

A “‘**convolute**’” algebraical representation of categorial **dialectics**, in terms of our example here, of Marx's **syn**chronic, systematic, presentational **dialectic** of **Capital**, would proceed, or “‘grow’”, as follows --

C → **M** → **R** →

That is, a “‘**convolute**’” representation would present that **dialectic** as a **sequence** [‘→’] of **single** categories of progressively increasing complexity/“thought-concreteness”/“determinateness”, as we have seen, but with each successor category replacing and, as it were, “‘disappearing’” (*all* of) its predecessor category(ies).

Such a representation would suggest that the **phenomena** of **Commodities** lose all relevance for **us**, and all **independent** existence for **us**, once **we** “‘uplift’” **our** attentions, “‘up’” to the **phenomena** of **Monies**, and that the **phenomena** of **Monies**, in turn, also lose all relevance for **us**, and all **independent** existence for **us**, once **we** “‘uplift’” **our** attentions, “‘up’” to the **phenomena** of the **Monies**-mediated **ciRculations** of **Commodities**.

On the contrary, per the rules of **our** rules-system for algebraic, categorial **dialectic**, the **generic dialectical** categorial progression is, except for the sequence **starter**, the **generic «arché»**-category, \mathbb{Q}_1 , a sequence of [non-amalgamative] **sums**, that is, a sequence of **series**. Expressed in terms of our **specific** example #1, that sequence of series is --

$(\underline{\mathbb{C}}^1 \rightarrow \underline{\mathbb{C}}^2 \rightarrow \underline{\mathbb{C}}^3) \equiv (\mathbb{Q}_{\mathbb{C}}^1 \rightarrow \mathbb{Q}_{\mathbb{C}}^2 \rightarrow \mathbb{Q}_{\mathbb{C}}^3) = (\mathbb{Q}_{\mathbb{C}} \rightarrow \mathbb{Q}_{\mathbb{C}} \oplus \mathbb{Q}_{\mathbb{M}} \rightarrow \mathbb{Q}_{\mathbb{C}} \oplus \mathbb{Q}_{\mathbb{M}} \oplus \mathbb{Q}_{\mathbb{MC}})$

-- in which ‘ \oplus ’ means the same as ‘ $\dashv\oplus$ ’, but **de**-emphasizing the **oppositional** [‘ \dashv ’] aspects of these **sums**, or **superpositions**, of **qualities**.

Our reviews of subtexts common to many recent discourses addressing, e.g., Marxian **dialectic**, indicate strongly to **us** that a “‘**convolute**’” sequence of categories is what **many** subliminally expect from **dialectic**.

But an “‘**evolute**’” progression of **series** -- a “‘sequence of **series**’” -- is what Hegel prescribes.

Recall that Hegel, in (§5), described what we term the “‘**evoluteness**’” **feature** of **dialectic**, as follows --

“‘We are always carrying **everything** that went before along with ourselves into what is new... .’”

This corresponds precisely to $\mathbb{Q}_{\mathbb{C}} \rightarrow \mathbb{Q}_{\mathbb{C}} \oplus \mathbb{Q}_{\mathbb{M}} \rightarrow \mathbb{Q}_{\mathbb{C}} \oplus \mathbb{Q}_{\mathbb{M}} \oplus \mathbb{Q}_{\mathbb{MC}} \dots$, but **not** to $\mathbb{Q}_{\mathbb{C}} \rightarrow \mathbb{Q}_{\mathbb{M}} \rightarrow \mathbb{Q}_{\mathbb{MC}} \dots$, i.e., **not** to **C** → **M** → **R**

The ‘priorly’ evoked, ‘priorly’ ‘**explicitized**’ categor(y)(ies) (is)(are) **not** erased, **nor** forgotten, as a result of the ‘laterly’ evoked ‘**explicitizations**’ of their supplementary successor categor(y)(ies). The former remain possible.

(Those)(That) prior categor(ies)(y) *should* still be there, still present, and, standardly, for us, *are* still there, and are also arrayed in the order of their [rising] ‘thought-complexity’/determinateness, which is also the order in which they evoke.

In the generic, undergirding arithmetic of our \mathbb{N}_Q ideography for dialectic, this is mirrored, vestigially.

It is mirrored by the magnitudes of the ordinal-number, “**N**atural” number subscripts of the “uninterpreted” ‘meta-numbers’ that correspond, generically, to the algebra’s specific, interpreted, ‘category-symbols’ --

$$(\mathbb{Q}_C) \mapsto [\mathbb{Q}_1] \rightarrow (\mathbb{Q}_C \oplus \mathbb{Q}_M) \mapsto [\mathbb{Q}_1 \boxplus \mathbb{Q}_2] \rightarrow (\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC}) \mapsto [\mathbb{Q}_1 \boxplus \mathbb{Q}_2 \boxplus \mathbb{Q}_3].$$

Feature (§6). Does Our Example Instance Capture Hegel’s Sixth Feature of Generic Dialectic: “‘Supersession’”?

This latter Hegelian prescription about dialectic also dovetails with Hegel’s final explicit prescription in the quoted passage -- prescription (§6), per our partitioning thereof: “‘Whereas, in what preceded, each momentarily immediate determination passed as ultimate, it is now demoted into being only a moment’”.

Thus, in step **0** of our presentation of Marx’s Capitals-theory, the ‘category-symbol’ $\mathbb{Q}_C^{2^0} = \mathbb{Q}_C^1 = \mathbb{Q}_C$, denoting the Commodities category, is our only, hence, for that step, our stepwise immediate, and momentarily ultimate, step s = 0 ultimate, category for describing/defining/explaining the totality of our Capitals-System experiences.

But our minds’ reflection, of and with category \mathbb{Q}_C , upon itself, as modeled by $\mathbb{Q}_C^{2^1} = \mathbb{Q}_C^2 \equiv \mathbb{Q}_C \otimes \mathbb{Q}_C \equiv \mathbb{Q}_C(\mathbb{Q}_C) \equiv \hookrightarrow \mathbb{Q}_C(\mathbb{Q}_C)$, revealed the inadequacy, for our task, that of fully describing/defining/explaining our experiences of the Capitals-System in their totality, of the category Commodities, \mathbb{Q}_C , *by itself*. That “‘self-reflexion’” revealed the ‘non-ultimaticity’ of category \mathbb{Q}_C for that task, by, in, and as step s = 1, for ‘meta-«dynamis»’ **1**.

That immanent or self-critique of category \mathbb{Q}_C , denoted by $\mathbb{Q}_C(\mathbb{Q}_C) \equiv \hookrightarrow \mathbb{Q}_C(\mathbb{Q}_C)$, called to mind an additional category, a 2nd, supplementary, ‘counter-[example]category’, namely the Monies category, \mathbb{Q}_M --

$$\mathbb{Q}_C^2 \equiv \mathbb{Q}_C \otimes \mathbb{Q}_C \equiv \mathbb{Q}_C(\mathbb{Q}_C) \equiv \hookrightarrow \mathbb{Q}_C(\mathbb{Q}_C) = \mathbb{Q}_C \dashv \oplus \mathbb{Q}_{CC} \vdash \equiv \mathbb{Q}_C \dashv \oplus \mathbb{Q}_M.$$

This second category, of Monies, in step **1**, demoted the Commodities category from its thus former status as being the “ultimate” category of this description/definition/explanation of the Capitals-System, that it held in step **0**. This explicit appearance of ‘category-symbol’ \mathbb{Q}_M in presentation-step **1** represents, already, the [cognitive] “‘formal subsumption’” [cf. Marx] of category \mathbb{Q}_C by category \mathbb{Q}_M .

This new, second category, of Monies, itself thus then became the -- “momentarily” -- “ultimate” category of our model of Marx’s Capitals-Theory, the step **1** “ultimate”.

That is, the Monies category, $\mathbb{Q}_{CC} \vdash \equiv \mathbb{Q}_M$, became, for step **1**, our new “vanguard” category, our new leading, ‘[meta-]meristemal’ category, “demoting” category \mathbb{Q}_C from that status.

Further reflection will, typically, again reveal ‘non-ultimaticity’ -- this time, the ‘non-ultimaticity’, for the Capitals-System, of the category of Monies, \mathbb{Q}_M .

That is, *our minds*’ reflexion, upon *itself*, of, and, thereby, the *self*-critique of, $\langle \mathbb{Q}_C \oplus \mathbb{Q}_M \rangle$, regarding *its* implicit claim to fully describe/define/explain *our experiences* of the Capitals-System, reveals *its inadequacy*, *its insufficiency*, and *its incompleteness* for that task. *It* is *so* because of the categories inherent in *our* “chaotic”, ‘pre-theorized’, and raw, ‘*un*systematized’, or not-yet-systematized, *experiences* of the Capitals-System that *it* still leaves out of ‘*explicitude*’.

In particular, the “next-up” category that $\langle \mathbb{Q}_C \oplus \mathbb{Q}_M \rangle$ leaves out is the category \mathbb{Q}_{MC} , of what we term ‘The *Monies*-mediated *ciRculations* of *Commodities*’, which we can also evoke via $\mathbb{Q}_C^3 \vdash \equiv \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC}$.

The categories-superposition $\langle \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \rangle$ represents an *improved* categories-theory of the Capitals-System, an improved theory of what the Capitals-system is “made of”, covering more of that system’s key, defining *phenomena* than did either $\langle \mathbb{Q}_C \rangle$ or $\langle \mathbb{Q}_C \oplus \mathbb{Q}_M \rangle$. That “‘sum’” represents a kind of ‘meta-anatomy’ and ‘meta-physiology’ of that *social* ‘meta-organism’, inventorying its “parts” [*C*, *M*] together with their processes [*R*].

In this improved categories-theory of the ‘Capitals-System’, $\langle \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \rangle$, the category \mathbb{Q}_{MC} , is the [“*momentarily*”] “immediate” and “ultimate” one, the most advanced, most complex, most “determinate”, or most ‘determinations-rich’, category, superseding and “‘surmounting’” *its* immediate predecessor category, \mathbb{Q}_M [as well as the still-earlier-evoked category, \mathbb{Q}_C], and thus demoting *it* from *its* formerly “ultimate” status, and from *its*, therefore now former, “vanguard”, or ‘meta-meristematic’, role.

Feature (§7). Does Our *Example Instance* Capture a *Seventh Feature* of Hegelian *Generic Dialectic*: ‘*Uni-Archéonicity*’?

Hegel does *not* *explicitly* describe this *feature*, in the quoted passage, but he does do so elsewhere [see Part **II** hereof].

We find this *feature* to be one of the most remarkable and important aspects of ‘Hegel’s “‘algorithm’” for *dialectic*’: this *feature* that we call ‘*uni-archéonicity*’.

In an historical, *diachronic* sense, the biological “tree of life” of planet Earth, for instance, may have grown from units of what we would assign to a single category, composed of a single kind of living organism, one that selects for, e.g., the “*Levo*”-rotated versions of its organic biological molecules, as opposed to their “*Dextro*”-rotated versions.

Hegel’s *dialectical* categorial progressions, though typically of the *synchronic*, *systematic*, *classificatory* kind --focused on the *present* content of the [then-known] *cosmos* as a *whole*, or of a *universe* of discourse contained within that present *total cosmos* -- also “stem” from a *single* “stem”, from a *single* category or kind.

Vast and ramified systems of, e.g., hundreds of interconnected categories may eventually be evoked, step-by-step, in Hegel’s categorial progressions.

But all of these many categories “sprout” from a *single starting*, or «*arché*», category; from a *single, unified* concept, comprehending but a *single* kind of things.

In our *first* example, of the *three* \mathbb{Q}_C -subsequent categories that we have identified so far -- \mathbb{Q}_M , \mathbb{Q}_{MC} , and \mathbb{Q}_K -- all of them are evoked from out of, and constituted by, *our* reflection upon, & *our* immanent critique *within*, the *first, single*, «*arché*», *origin* category, that of \mathbb{Q}_C , of *Commodities*, or upon later-presented categories that «*aufheben*»-“‘contain’” *it*. These *three* are revealed as being *implicit* in, and *presupposed by*, the existence of the *modern* commodity kind of *social object*, and kind of “*social relation of production*” [cf. Marx], *itself* -- the “commodity-*relation*” [cf. Marx] -- within *modern*, capital-centered society.

Example 2 of 3: The *Dialectic* of the Contemporary Terrestrial *Biology Domain*. Most of *our* so-far published expositions of ‘*The [Unified] Dialectic* [NB: *singular*] of *Nature*’, have been expositions of *our* ‘*Dialectical “Theory of Everything” [Meta]-Equation*’, in the context of ‘*diachronic dialectic*’, or “‘*Historical Dialectic*’”, the *second species* of ‘*Dialectic-in-general*’ in *our* ‘*Dialectic of the Dialectic Itself*’ [‘*synchronic* or “*systematic*” *dialectic*’ is *its first species*].

That is, these expositions have been narrated solutions to *our* ‘*natural history as total history meta-equation*’ --

$$\underset{\vee}{1}\mathbb{X}_{\tau}^{\vee} = \langle \underset{\vee}{1}\mathbf{n}_{\vee} \rangle^{2^{\tau}} \vdash \equiv \underset{\vee}{1}\mathbf{n}_{\vee} \oplus \dots \oplus \underset{\vee}{1}\mathbf{h}_{\vee}^{\vee} \dots, \text{ all for “locus”, or “venue”, } \underset{\vee}{1}^*$$

-- for epoch $\tau = 8$ or 9 . This *equation*, *we* hasten to note, is *not* quite yet, historically-ontologically, altogether truly an ‘*everything equation*’, covering all *humanity*-known ontology. *It* is *not*, in part, in that *it* does *not yet* encompass whatever, in fact, “*Dark Energy*” & “*Dark Matter*” will turn out to be. In this ‘[*meta*]-*equation*’, the symbol for the «*arché*» ontological category, ‘ $\underset{\vee}{1}\mathbf{n}_{\vee}$ ’, stands for the ‘cosmo-ontological category’/«*arithmos*» of the ‘pre-/sub-*n*uclear

“particle” «*monads*», i.e., for the “*non*-composite” bosons & fermions, e.g., for “*quarks*” & “*gluons*”. The symbol ‘ $\underset{\vee}{1}\mathbf{h}_{\vee}^{\vee}$ ’ stands for a [‘predictedly’] ‘*cosmo*-ontological category’ of *humanity*. Both inhere in ‘*Domain everything*’, $\mathbf{D} = \vee$.

However, for our *second* example herein, given this essay’s focus on Hegel’s *systematic dialectic* for the *presentation* of *synchronically-present, contemporaneous totalities*, we will do otherwise. We will solve [‘ $\vdash \equiv$ ’], as distinct from the ‘*history*-model kind of meta-equation’, such as that of *our* ‘*everything equation*’, a ‘meta-equation meta-model’ for a multi-step *presentation* of ontological content of our *present cosmos*. For brevity, this ‘meta-model’ will address only the *synchronic* excerpt that is *our present cosmos*, confined to the ‘*Biological*’ part of that *present* content *only*. This *second* & *synchronic* ‘meta-model’ is expressed by the *four-step* ‘[terrestrial] *Biology meta-equation*’ presentation-solution [‘ $\vdash \equiv$ ’], for ‘*sub-universe*’, i.e., for *Domain*, $\mathbf{D} = \mathbf{B}$, inside *universe*[-of-discourse] $\mathbf{u} = \vee$, also “‘inside” ‘locus $\underset{\vee}{1}$ ’, --

$$\underset{\vee}{1})\mathbb{H}_{\mathbf{s}}^{\mathbf{B}} = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{2^{\mathbf{s}}}$$

$$\text{-- for step } \mathbf{s} = \mathbf{0}: \underset{\vee}{1})\mathbb{H}_{\mathbf{0}}^{\mathbf{B}} = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{2^{\mathbf{0}}} = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{\mathbf{1}} = \underset{\vee}{1}\mathbf{p}_{\mathbf{B}}; \text{ «arché» reaffirmation;}$$

$$\text{-- for step } \mathbf{s} = \mathbf{1}: \underset{\vee}{1})\mathbb{H}_{\mathbf{1}}^{\mathbf{B}} = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{2^{\mathbf{1}}} = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{\mathbf{2}} \vdash \equiv \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{e}^{\mathbf{B}};$$

$$\text{-- for step } \mathbf{s} = \mathbf{2}: \underset{\vee}{1})\mathbb{H}_{\mathbf{2}}^{\mathbf{B}} = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{2^{\mathbf{2}}} \approx \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{\mathbf{4}} \vdash \equiv \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{e}^{\mathbf{B}} \rangle^{\mathbf{2}} \\ \vdash \equiv \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{e}^{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{e}_{\mathbf{ep}}^{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{b}^{\mathbf{B}};$$

$$\text{-- for step } \mathbf{s} = \mathbf{3}: \underset{\vee}{1})\mathbb{H}_{\mathbf{3}}^{\mathbf{B}} = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{2^{\mathbf{3}}} \approx \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \rangle^{\mathbf{8}} \vdash \equiv \\ = \langle \underset{\vee}{1}\mathbf{p}_{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{e}^{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{e}_{\mathbf{ep}}^{\mathbf{B}} \oplus \underset{\vee}{1}\mathbf{b}^{\mathbf{B}} \rangle^{\mathbf{2}} \vdash \equiv$$





*[Of the two ‘dialectical diacritical marks’, of general form ‘ $\underset{\vee}{n}$ ’, in ‘ $\underset{\vee}{1}$ ’, the $\mathbf{n} = \mathbf{1}$ ’ signifies ‘Taxonomy Level *number 1*’, the level of highest generality in *F.E.D.*’s ‘*Encyclopedia Dialectica* [*E.D.*] Universal Taxonomy’, & the $\mathbf{u} = \vee$ ’ signifies the “everything”, “All things”, or “All” universe of discourse, via an inverted ‘A’. For more regarding this “‘*Dialectic of Nature*’” ‘*meta-equation*’, see *our* main treatise: *F.E.D., A Dialectical Theory of Everything: Meta-Generalogies of Our Universe and of Its Sub-Universes -- A Graphical Manifesto*, in 5 volumes. Volumes 0 and 2 are in print as of this writing.]


$\mathbb{1}_{\mathbf{p}} \oplus \mathbb{1}_{\mathbf{e}} \oplus \mathbb{1}_{\mathbf{ep}} \oplus \mathbb{1}_{\mathbf{b}} \oplus \mathbb{1}_{\mathbf{bp}} \oplus \mathbb{1}_{\mathbf{be}} \oplus \mathbb{1}_{\mathbf{bep}} \oplus \mathbb{1}_{\mathbf{l}}$

-- wherein we solve [$\vdash \equiv$], as follows, for individual terms contained in the qualitative superposition/'cumulum' expressed above:




$\mathbb{1}_1 \hookrightarrow \mathbb{1}_p^{\mathbb{B}} \equiv \mathbb{1}_{\mathbb{P}_B} \equiv$ “prokaryotic” or ‘pre-eukaryotic’, ‘nucleus-less’ living cells; given [stipulated «*arché*»];




$\vdash \equiv \text{‘cells of cells’, ‘eukaryotic’ ‘meta-cells’, each one made up out of a heterogeneous multiplicity of ‘prokaryotic’ cells, reconfigured as organelles [e.g., mitochondria; chloroplasts].}$
 “‘Auto-catalytic’” [self]-conversion of **p** into **e**, induced by **p itself**;




 , processes which subsume or convert “**p**rokaryotic” *cells* [in]to “**e**ukaryotic” *cells*,
 catalyzed by “**e**ukaryotic” *cells*, e.g., “eating” of “**p**rokaryotic” *cells* by “**e**ukaryotic” *cells*;


 , processes which subsume or convert “**e**ukaryotic” *cells* [in]to “**p**rokaryotic” *cells*,
 catalyzed by “**p**rokaryotic” *cells*, e.g., “eating” of “**e**ukaryotic” *cells* by “**p**rokaryotic” *cells*
 [e.g., *bacterial* predation of single *cells*; *prokaryotic Vampirovibrio chlorellavorus* predation of *eukaryotic Chlorella vulgaris*];


 $\vdash \equiv \underset{\text{4}}{\underset{\text{v}}{\text{b}}}^{\text{B}} \equiv$
 ‘*organisms of organisms*’, “*meta-eukaryotic*” ‘*meta-organisms*’, *each one* made up

out of a heterogeneous multiplicity of “*eukaryotic organisms*, i.e., “*multi-cellular*”
plant and *animal organisms* [*metaphyta*; *metazoa*]; ‘[*meta*]-*eukaryotes* [*made up out*] *of*
eukaryotes’, ‘*meta-biota*’, or ‘*meta-karyota*’. [*Self*]-conversion of *e* into *b*, induced by *e*:

 $\vdash \equiv$ as , processes which subsume or convert “**p**rokaryotic” *cells* [in]to ‘meta-biota’, catalyzed by ‘meta-biota’, e.g., “eating” of “**p**rokaryotic” *cells* by ‘meta-biota’;
as , processes which subsume or convert ‘meta-biota’ [in]to “**p**rokaryotic” *cells*, catalyzed by “**p**rokaryotic” *cells*, e.g., “eating” of the flesh of ‘meta-biota’ by “**p**rokaryotes” [e.g., *bacterial* “eating” of *multicellular bodies*, viz., by “toxic cold”, with “yellow mucus”; *bacterial* consumption of *sinus tissue*];



 $\vdash \equiv$ as , processes which subsume or convert “eukaryotic” *cells* [in]to ‘meta-biota’, catalyzed by ‘meta-biota’, e.g., “eating” of “eukaryotic” *cells* by ‘meta-biota’;

as , processes which subsume or convert ‘meta-biota’ [in]to “eukaryotic” *cells*, catalyzed by “eukaryotic” *cells*, e.g., “eating” of the flesh of ‘meta-biota’ by “eukaryotes” [e.g., *yeast cells*’ predation of *multicellular bodies*, by *yeast* infections; “eukaryote” consumption of, e.g., *human bladder tissue*];

$\vdash \equiv$ as $\frac{1}{\text{Vep}}^B$, processes which subsume or convert $\frac{1}{\text{Vep}}^B$ formations [in]to 'meta-biota', $\frac{1}{\text{Vb}}^B$, catalyzed by 'meta-biota'; as $\frac{1}{\text{Vepb}}^B$, processes which subsume or convert 'meta-biota', $\frac{1}{\text{Vb}}^B$, [in]to $\frac{1}{\text{Vep}}^B$ formations [other permutations, e.g., $\frac{1}{\text{Vbpe}}^B$, & $\frac{1}{\text{Vpeb}}^B$, may be solved via similar principles];

$$\begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \equiv \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \equiv \text{'organisms of organisms', "meta-meta-eukaryotic" 'meta-organisms', each one}$$

made up out of a heterogeneous multiplicity of 'meta-biotic' organisms, i.e., societies of metazoa or of metaphyta, e.g. social animals; animal societies [e.g., meerkats].

Auto-catalytic [self]-conversion of b into l, induced by b itself.

This presentation* first calls presentees' attentions to focus on the simplest & earliest-extant category of life presently known to have units that are still extant -- the "prokaryotic" living cells -- including "free living" bacteria & archaea, e.g., those that are part of the human body, including of its "microbiome", plus those that are presently incorporated in higher, "eukaryotic" units, reconfigured into the form of "organelles", e.g., mitochondria, chloroplasts, etc.

It then raises presentees' attentions to a higher scale, by noting that some of these, formerly "free living", "prokaryotes", & especially the "organelle" reconfigurations thereof, are presently, simultaneously incorporated, next level up, in and as "eukaryotic" living cells. Some of these are, in turn, already, presently included in still higher levels/scales of present, Biological organization. The "eukaryotic" living cells represent the 'first self-involution' of "prokaryotic" living cells. This presentation next points out that local units, and local populations, of the "eukaryotic" and "prokaryotic" ontological categories also exist, presently, in various combined, "hybrid", parasitic/predatory and/or symbiotic combinations.

Then, attention is directed further "'upwards'" in 'qualo-fractal' scale, to the 'second self-involution' of "prokaryotic" living cells, which is also the 'first self-involution' of "eukaryotic" living cells, namely, to the presently existing level of Biological organization of "metaphyta" & "metazoa", also known as that of the "multi-[eukaryotic]-cellular organisms". It is pointed out that many of the presently existing "eukaryotic" organisms, which also contain "prokaryotic" organisms, e.g., in the form of some of their organelles, also presently exist inside [nearly] all "multi-cellular" plant & animal "higher organisms", which we reference, collectively, as the 'meta-biota', whether "meta-phyta" or "meta-zoa". It is then further called to attention that local units, and local populations, of the 'meta-biota' may also presently exist in various "hybrid", e.g., parasitic/predatory and/or symbiotic, combinations with "eukaryotes", and, separately, with "prokaryotes", as well as 'non-separately' -- together -- with the existing, "hybrid" combinations of "eukaryotes" and/with "prokaryotes".

Next, and finally, for the purposes of this presentation, i.e., for this 'presentation-model', or 'presentation-equation', the attentions of presentees are directed to the top 'qualo-fractal' scale of this D = B Domain's 'qualo-fractal tower'. It is directed to the 'third self-involution' of the "prokarya", which is also the 'second self-involution' of the "eukarya" or "eukaryota", and the 'first self-involution' of the 'meta-biota': to Biological sociality. It is noted that many of the presently existing individual Biological bodies that we call 'meta-biota' are not "free living", "solitary", asocial organisms, but also presently inhere, e.g., in animal socialities, viz., wolves [dogs], horses, cattle, meerkats, etc., etc.

Thus, synchronic, systematic-dialectical presentation is a cognitive climbing of a nested, 'qualo-fractal' ladder, or scale.

*[Given the purposes of this essay, we have simplified this 'meta-model' by means of a major omission. This omission also makes this presentational, synchronic, 'systematic-dialectical meta-model' more aligned with our diachronic 'everything equation meta-model' for the context of historical dialectic. More specifically, there is a level of Biological organization that we encounter synchronically, and systematically, that does not form part of the historical, diachronic progression of taxonomy level 1 ontological categories, to the extent that free living "organs", later coalescing to form the bodies of multi-cellular, 'meta-biotic' organisms, are not encountered in the natural-historical record. Thus, a more apt systematic-dialectical, presentational-model of the contemporary Terran Biological Domain would

solve for $\begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B}$ as $\begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B}$, standing for the ontological category of the major "organs", or "tissues", found within the bodies of multicellular, 'meta-biotic',

organisms, instead of solving as above: $\begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \equiv \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B}$. Our presentation of the Biological Domain would then be represented by the sixteen-term 'physio-ontological categorial cumulum' --

$$\begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} = \left(\begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \right)^{2^4} = \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \oplus \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B}$$

-- by solving $\begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B} \equiv \begin{array}{c} \text{B} \\ \downarrow \\ \text{B} \end{array} \text{B}$, instead of the eight-term ontological-categorial 'cumulum' presented above].

The ‘[self]complexification’ feature of this ontological-categorical, *dialectical*, or «*aufheben*», progression, for the **B**iological **D**omain, produced by the *physically-literal* «*aufheben*» “‘self-*in*volutions’”, otherwise also describable as “‘self-re-entries’”*, of the “**P**rokaryotes”, and of their higher-degree “‘*in*volutés’”, is quite forcefully evident in this ‘meta-model’. Thus, contrast your *intuitive* sense of the *cognitive complexity* of the *concept* of a “**P**rokaryotic” *cell*, vs. *that* of a “**E**ukaryotic” *cell*, made up out of a heterogeneous multiplicity of “**P**rokaryotic” *organelles*, versus *that* of a ‘meta-*biotic*’ *multicellular organism*, made up out of a heterogeneous multiplicity of “**E**ukaryotic” *cells*, vs. *that* of an animal *society*, made up out of a heterogeneous multiplicity of ‘meta-*biotic*’ *multicellular organisms*. Higher categories, later-evoked, later-presented categories, are more ‘*thought-complex*’, as their *objects* are more *physically complex*, than are earlier-evoked, earlier-presented categories -- patently, since the units of the former include/contain units of the latter.

Likewise, the ‘*evoluteness*’ of this ‘meta-model’ can be grasped as a necessary feature of its fitness to reality. This is so when one considers that entities inhering in each of the *eight* ontological categories of this ‘meta-model’ *co*-exist in the present actuality of [Terran] **B**iology. Typically, they do so *both* as still “free-living”, independent units, and also as contained in higher units. For example, free-living “**P**rokaryote” units did *not all* disappear just because **E**ukaryotic units arose from *them*. Free-living “**E**ukaryotes” did *not all* become extinct just because ‘meta-*biota*’ arose from *them*. Etc. *Units* of ontological content denoted by *earlier* ontological categories are generally «*aufheben*» *conserved*, & *doubly* so, both *inside* & *outside* the *units* of their superseding categories, after *later* ontological categories evoke from out of *them*.

Similarly, *we see*, in *our experience* of the **B**iotic **D**omain, that *eukaryotes* “‘*supersede*’”, or *subsume*, *prokaryotes*, that ‘*meta-biota*’ *subsume* *eukaryotes*, and that *sociality* *subsumes* ‘*meta-biota*’, e.g., *animal societies* subsume *meta-zoa*.

All of these vastly diverse forms and scales of life ‘nestedly’ contain, to different *degrees* of nesting, and are founded upon, and “stem” from, a *single stem*, with a *single root* -- that of “**P**rokaryotic” *living cells*. They all thus instantiate the ‘*uni-archéonicity*’ feature of *dialectic*, *synchronic* and *diachronic* alike. In terms of the ‘**B**io-taxonomy’ of *present*, *contemporary* **B**io-systematics, the taxonomy of this “‘*systematic dialectic*’” operates at the scale of “Empires”. The «*arché*» ontological category of this ‘meta-model’ corresponds to the “Empire” named the “**P**rokarya” or “**P**rokaryota”. Its *2nd* ontological category corresponds to [part of] the “Empire” named “**E**ukarya”, “**E**ucarya” or “**E**ukaryota”, but *only* to the *unicellular* “**E**ukaryota”. Much contemporary **B**io-systematics recognizes *only* these *two* “Empires”. In effect, there is an «*aufheben*», *dialectical*, ‘qualo-fractal’ *classification system*, a new ‘**B**io-taxonomy’, *implicit* in this ‘meta-model’. It calls for further division of the present “**E**ukaryota Empire” into *2* additional “Empires”, for a total of *3* “Empires” within the present “**E**ukaryota” taxon. This system[atics] overall would then consist of *4* “Empires” [using ‘ \hookrightarrow ’ to signify ‘*synchronic synonymy*’] --

$\begin{matrix} \text{U}_1 \\ \text{U}_1 \end{matrix} \hookrightarrow \begin{matrix} \text{B} \\ \text{P} \end{matrix} \equiv \begin{matrix} \text{P}_B \\ \text{P}_B \end{matrix} \hookrightarrow$ “Empire” ‘**P**rokaryotiae’ [stipulated «*arché*» “Empire”, or ‘Sub-Universe’];

$\begin{matrix} \text{U}_2 \\ \text{U}_2 \end{matrix} \hookrightarrow \begin{matrix} \text{B} \\ \text{PP} \end{matrix} \equiv \begin{matrix} \text{P}_{\text{B}} \\ \text{P}_{\text{B}} \end{matrix} \hookrightarrow$ “Empire” ‘**E**ukaryotiae’, or ‘**Meta**-**P**rokaryotiae’ [*unicellular eukaryotes only*];

$\begin{matrix} \text{U}_4 \\ \text{U}_4 \end{matrix} \hookrightarrow \begin{matrix} \text{B} \\ \text{EE} \end{matrix} \equiv \begin{matrix} \text{P}_{\text{B}} \\ \text{P}_{\text{B}} \end{matrix} \hookrightarrow$ “Empire” ‘**Meta**-**K**aryotiae’, or ‘**Meta**-*bi*otiae’;

$\begin{matrix} \text{U}_8 \\ \text{U}_8 \end{matrix} \hookrightarrow \begin{matrix} \text{B} \\ \text{BB} \end{matrix} \equiv \begin{matrix} \text{P}_{\text{B}} \\ \text{P}_{\text{B}} \end{matrix} \hookrightarrow$ “Empire” ‘**S**ocialiae’.

-- a less arbitrary, less procrustean partitioning, in *our* view, than lumping all ‘trans-microbials’ into *1* class, “**E**ukarya”.

*[The *cognitively experienced* ‘self-motion’ of the ‘finitary set of all sets’, which is the “*extension*” of the “*intension*” of the set idea, the *extensional* or set-theoretical definition of the “set” idea itself, is also a generic *conceptual* model for such *physical* processes of ‘self-recurring’ “‘self-re-entry’”. If we render such a set-process as including *only* a singleton content, α , in the «*arché*» set for this sets-progression, & including *only* the “*improper subset*” in each successive set, in the scope of this “‘self-re-entry’” process, to simplify exposition, we get $\{\alpha\} \rightarrow \{\alpha, \{\alpha\}\} \rightarrow \{\alpha, \{\alpha, \{\alpha\}\}\} \rightarrow \{\alpha, \{\alpha, \{\alpha, \{\alpha\}\}\}\} \rightarrow \{\alpha, \{\alpha, \{\alpha, \{\alpha, \{\alpha\}\}\}\}\} \rightarrow \dots$, a ‘self-union’ progression of sets-as-elements: $\{\alpha\} \rightarrow \{\alpha\} \cup \{\{\alpha\}\} \rightarrow \{\alpha, \{\alpha\}\} \cup \{\{\alpha, \{\alpha\}\}\} \rightarrow \{\alpha, \{\alpha, \{\alpha\}\}\} \cup \{\{\alpha, \{\alpha, \{\alpha\}\}\}\} \rightarrow \dots$. Full rendition of the definitionally self-driven ‘finitary set of all sets self-movement’, for a *finitary* “Universal Set”, U ; the set of all *non*-set objects of a given *Universe*

of discourse, and where 2^X denotes the “power-set”, or “set of all subsets”, of a set X , is $S_0 = 2^{\text{U}} \rightarrow S_1 = 2^{\text{U}} \cup 2^{2^{\text{U}}} \rightarrow S_2 = 2^{\text{U}} \cup 2^{2^{\text{U}}} \cup 2^{2^{\text{U}} \cup 2^{2^{\text{U}}}} \rightarrow \dots$

The *physically-literal* “‘self-re-entry’” of, for example, a number of “**P**rokaryotic” *cells*, to form a *proto*-“**E**ukaryotic” *cell*, with the incorporated “**P**rokaryotic” *cells* destined to become “*organelles*” of descendant, *fully*-“**E**ukaryotic” *cells* -- e.g., *mitochondria* and *chloroplasts* -- involves the sense that, by *combining* together, multiple, heterogeneous “**P**rokaryotic” *cells* create a new “inside”, a new ‘*internity*’, that of the *proto*-“**E**ukaryotic” *cell*, so that, indeed, the “**P**rokaryotic” *cells* are “[re-]appearing *inside*”, or “‘[re-]entering’”, *themselves as that proto*-“**E**ukaryotic” *cell*, in the very act that creates that *new* “inside”, of that *new kind* of *cell*. The *new* “inside”, into which the “**P**rokaryotes” *enter*, in which they “*appear*”, is created *at the same time* as, and *by*, that very “[re-]entry” and “[re-]appearance”. This «*aufheben*», *dialectic process* is one of the *simultaneous self*-negation, *self*-elevation, & *self*-conservation of the *involved* & “‘self-*in*volving” “**P**rokaryotes”].

Note also the interplay of ‘explicitude’ versus ‘implicitude’ is these **NQ** ‘meta-models’. The present ‘meta-model’ is **explicit** for information at the “‘**Empire**’” scale or level, as defined above. However, all of the vast, “‘vertical’”, [trans-]Platonic **dialectic** of the greater detail -- of the greater “determinatenesses” -- at the **Kingdom, Phylum, Class, Order, Family, Genus, and Species** scales, is merely **implicit**, elided from any ‘explicitude’, in this ‘meta-model’. Some of the later **dialectical arithmetics** evoked in the Seldonian, **synchronic**, **presentational**, **systematic** ‘**dialectic of the dialectical arithmetics themselves**’ have capacity to **explicitly** represent detailed taxonomic content at all **eight** of these classificatory levels concurrently. In the “slow” version of that presentational **dialectic**, the **2,040**th axioms-system, $\begin{matrix} \text{⌈} \\ \text{2,040} \end{matrix} \begin{matrix} \text{⌋} \\ \text{OHZEATBA} \end{matrix}$, has that expressive capacity. In one “fast” version of that **dialectical** presentation, which uses the ‘meta-unit-ization product rule’, the **ninth dialectical arithmetic**, $\begin{matrix} \text{⌈} \\ \text{9} \end{matrix} \begin{matrix} \text{⌋} \\ \text{θηζεδγβα} \end{matrix}$, has that capacity.

In terms of the ‘universal systematics’ **implicit** in **our** total, **Domain D = V**, ‘**everything equation meta-model**’, no longer restricted to the merely **Biological** systematics of the **Domain D = B** ‘**meta-model**’, presented above, there are **ten** “‘Empires’”, re-named ‘**Sub-Universes**’, such that ‘**Sub-Universes**’ **5, 6, 7, and 8** constitute a group of taxa conventionally known as the “Vitaē”, **Domain D = B**, mapping to the **four** “‘Empires’” cited above, and lumping what is sometimes termed “**non-cellular life**”, e.g., **viruses, viroids, prions**, etc., into ‘**Sub-Universe**’ ‘**Moleculariae**’ --

$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{n} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\equiv	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{n} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	« arché »: Sub-Universe “ Quantiae ” [non-composite bosons & fermions];
$\begin{matrix} \text{⌈} \\ \text{2} \end{matrix} \begin{matrix} \text{⌋} \\ \text{nn} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{s} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Meta-Quantiae ’ [composite bosons & fermions : mesons, protons, neutrons , etc.];
$\begin{matrix} \text{⌈} \\ \text{4} \end{matrix} \begin{matrix} \text{⌋} \\ \text{ss} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{a} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Atomiae ’ [covering the many, “periodic table” species of “ atomic ” elements];
$\begin{matrix} \text{⌈} \\ \text{8} \end{matrix} \begin{matrix} \text{⌋} \\ \text{aa} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{m} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Moleculariae ’, or ‘ Meta-Atomiae ’ [“molecules” -in-general];
$\begin{matrix} \text{⌈} \\ \text{16} \end{matrix} \begin{matrix} \text{⌋} \\ \text{mm} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{p} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe “ Prokaryotiae ”, or ‘ Meta-Moleculariae ’;
$\begin{matrix} \text{⌈} \\ \text{32} \end{matrix} \begin{matrix} \text{⌋} \\ \text{pp} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{e} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Eukaryotiae ’, or ‘ Meta-Prokaryotiae ’ [unicellular eukaryotes only];
$\begin{matrix} \text{⌈} \\ \text{64} \end{matrix} \begin{matrix} \text{⌋} \\ \text{ee} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{b} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Meta-Karyotiae ’, or ‘ Meta-Biotiae ’ [“meta-phyta” and “meta-zoa”];
$\begin{matrix} \text{⌈} \\ \text{128} \end{matrix} \begin{matrix} \text{⌋} \\ \text{bb} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{l} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Socialiae ’;
$\begin{matrix} \text{⌈} \\ \text{256} \end{matrix} \begin{matrix} \text{⌋} \\ \text{ll} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{h} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Humaniae ’, or ‘ Meta-Socialiae ’
$\begin{matrix} \text{⌈} \\ \text{512} \end{matrix} \begin{matrix} \text{⌋} \\ \text{hh} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\models	$\begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{y} \end{matrix} \begin{matrix} \text{⌈} \\ \text{1} \end{matrix} \begin{matrix} \text{⌋} \\ \text{v} \end{matrix}$	\Leftrightarrow	Sub-Universe ‘ Meta-Humaniae ’ [our predicted next ‘cosmo-ontology’, for the “ eu catastrophic”

versus for the “**discatastrophic**” branch of **present-immanent future** possibility, based upon **humanity** achieving, in “social formation” terms, the status of a unified, **democratic**, ‘**planetary polis**’ form of ‘**planetized humanity**’, later followed by formation of a ‘meta-unit-ary’ **federation** of Earth’s ‘**planetary polis**’ **unit** with **those** of other ‘intra-solar-systemic’, nearby, “Terraformed” planets, e.g., Venus & Mars, & requiring **three** new “‘species’” of ‘**meta-humanity**’, only minimally & fractionally **present today**, of (1) **genomically self-re-engineered super-humans**, (2) “**artificially-intelligent**” **android robots**, & (3) **a/g-hybrid bionic/prosthetic cyborgs**.]

-- wherein we have standardized on the ‘-iae’ suffix for ‘**Sub-Universe**’ nomenclature.

Example 3 of 3: The **Dialectic** of the **First Triad** of Hegel’s «**Logik**» -- “‘Set-Theoretical Interpretation’”. It behooves **us** to include at least **1** example wherein Hegel’s “‘algorithm’” for **dialectic** is applied to one of Hegel’s own **dialectics**. Why not choose, for such an example, the most classic of **all** of Hegel’s **dialectics**, the very example that his description of his “‘algorithm’”, quoted herein, above, was most intended to address, and the very **dialectic** that forms the **deepest foundation** of Hegel’s «**Logik**» entire, namely, the “‘**Being** \rightarrow **Nothing** \rightarrow **Becoming**’” **dialectic** that **opens** Hegel’s «**Logik**» itself? ‘**Uni-archéonicity**’ characterizes Hegel’s -- “**dialectical**” -- **Philosophical** System **as a whole**. **Immediate**, **indeterminate**, abstract **Being** is Hegel’s ultimate «**arché**» category for his System **as a whole**. **That** «**arché**» **category** forms the ultimate **root** category of Hegel’s categorial **dialectic** for **all** of that which constitutes the [**present**] “‘Absolute Totality’” per Hegel, namely, for Hegel’s **overall** “‘«**Logik**» \rightarrow «**Natur**» \rightarrow «**Geist**»’” **dialectic**.

Thus the category of *im*mediate, *in*determinate, abstract **Being** is *not* just the *starting* category for Hegel's *first* progression of categories -- the *one* that constitutes Hegel's «**Logik**» -- *alone*.

Instead, that *founding dialectic*, of “‘**Being** \rightarrow **Nothing** \rightarrow **Becoming**””, forms the *dialectical foundation* for Hegel's *Philosophical* System *entire*, for *all* of his “‘«**Logik**» \rightarrow «**Natur**» \rightarrow «**Geist**»”” *dialectic*.

Therefore, a more central example of Hegelian *dialectic* -- upon which to test Hegel's “‘algorithm””, and *our dialectical algebra* as a model thereof -- *we* felt, could not be found.

We see Hegel's «**Logik**» as a legitimate, non-mystical, *bona fide dialectic*, still of potential *scientific* value, and also of “‘*psychohistorical*”” value, today, to the extent that -- and *only* to the extent that -- his «**Logik**» is an attempt to present and elucidate the systematic interconnection of the concepts, or categories, that are most fundamental to *human cognition* within the *modern* ‘*human phenome*’/«*mentalité*», *circa* **1** C.E. to **2017+** C.E., and given that some of the categories that are fundamental to that *modern* ‘*human phenome*’/«*mentalité*» had antecedents and homologues in the ‘*human phenomes*’/«*mentalités*» of the *ancient* epochs of *humanity* as well [i.e., for the epochs located in the < **1** C.E., or B.C.E., history-span].

We do *not*, however -- as Hegel ‘statedly’ did -- account Hegel's specific and exact *dialectical* categorial progression in his «**Logik**» as being the *only* possible, or even, necessarily, the *optimal* or *best*, rendition for such a systematic exposition of the *modern* ‘*human phenome*’, or of the *interconnexion* of the *fundamental* categories upon which *modern cognition* and *linguistic communication* depend.

And, even if *we* assign ‘**Being** \leftrightarrow **B_L** \equiv $\mathbb{Q}_{\text{B}}^{\text{L}}$ \leftrightarrow $\mathbb{Q}_{\text{1}}^{\text{L}}$ ’, & also solve ‘ $\mathbb{Q}_{\text{BB}}^{\text{L}} \vdash \equiv$ **Nothing** \leftrightarrow **N** \leftrightarrow $\mathbb{Q}_{\text{2}}^{\text{L}}$ ’, *we* do *not* hold that Hegel's particular progression of ‘«**Logik**»-al’ categories constitutes the *unique* solution, the *only* possible & plausible solution, for that ‘*dialectical meta-equation*’ modeling the *full*, *trans-triadic*, and possibly trans-Hegelian, *Domain* of «**Logik**», **D** = **L** --

$$\text{L})\text{H}(\text{L}_{\text{sv}}\text{P} = (\text{B}_{\text{L}})^{\text{vL}_{\text{sv}}\text{P}} \vdash \equiv \text{B}_{\text{L}} \rightarrow \text{N} \rightarrow \mathbb{Q}_{\text{NB}}^{\text{L}} \rightarrow \dots$$

-- for $\text{L}_{\text{sv}} > \mathbf{1}$.

Note also that, herein, we will be exploring, and mathematically modeling, this *founding* Hegelian *dialectic*, that of the “‘**Being** \rightarrow **Nothing** \rightarrow **Becoming**”” *triadic dialectical categorial progression*, by way of a *modern*, “*totality*”-theoretical, i.e., *set-theoretical*, *interpretation*.

But, here, *we* should also hasten to add that the “‘set theory””, or “‘class theory””, that *we* shall be employing, for this ‘*dialectical* meta-model’, is a *non*-Cantorian, or even an “‘*anti*-Cantorian””, set theory, in that we shall invoke only *finitary* sets, sets of “*finite* cardinality”, i.e., sets “containing” only a *finite* number of “elements”, albeit a *vast* number.

In this “‘set theory””, a “totality”, i.e., a *set*, like an «*arithmos*» for the *ancient* Mediterranean «*mentalité*», is, typically, both a *unity* & a *multiplicity*. Such a *set* is like a *category*, which is, per Tony Smith: “a principle (a universal) for unifying a manifold ... (different individuals, or particulars) [HdN: that] thus articulates a structure with two poles, a pole of unity and a pole of differences”*. A *set* typically expresses the *unity*, the *unifying quality*, or “*intension*”, shared in common by a *group* of “logical *individuals*”, of “‘*units*””, or of *set* “*elements*”. *It* does so by means of *displaying* their “*extension*”. I.e., *it* does so by *its* constituting the “*set of all elements*” that share that given *quality*, or “*intension*”. *It* does so by being “the *set* of”, or the *set* “containing”, *all* of the *elements* exhibiting the *quality*/“*intension*” in question.

So how do we want to express, by means of a *set*, or “totality”, the *quality* of [**A**ll] present “Being”, the *quality* common to all presently existing things, the *quality* of “‘Being-in-general””, the *generic quality*, shared by all things that [presently] “be”?

*[Tony Smith, *The Logic of Marx's Capital: Replies to Hegelian Criticisms*, Albany: State University of New York Press, **1990**, p. **5**].

What is that “intension”, here, e.g., that of the word “being”? What specific quality is “intended” by that word? What “extension”, what multiplicity of “elements”, express that unitary “intension” set-theoretically, i.e., “extensionally”?

Presumably, that “extension”, that set, must be the set of all things presently existing. It would not be out of place -- not at all -- to call this set, or “totality”, “The TOTALITY”! Suppose, then, that we mentally form this set, this idea-object representing the category of all presently existing Being. This will be a vast, but still finite, set, that should embrace the greatest real diversity that we can imagine.

- It will have to include, e.g., as one of its implicit sub-sets, the set of the extant sub-nuclear “particles”, that is, of the non-composite bosons and fermions.
- It must include momentaneously extant sub-atomic “particles” [composite bosons & fermions: mesons, protons, neutrons, hyperons, etc.].
- It will have to include atoms, of all of the “atomic species”, of the “elements” of the “periodic” table, presently extant.
- It will have to include molecules -- those of planetary lithospheres, hydrospheres, atmospheres, and biospheres, if any, as well as interstellar molecules, including those of the “molecular clouds” of “stellar-nurseries”.
- It will have to include the “prokaryotic” living cells of planet Earth, and, perhaps, of many other planets too.
- It will have to include the “eukaryotic” living cells of planet Earth, and, perhaps, of many other planets also.
- It will have to include the “meta-biota”, the “meta-phyta” and the “meta-zoa” -- the “multicellular” living organisms of planet Earth, and, perhaps, of other planets as well.
- It will have to include the social animals, the animal societies, and what we call the ‘social plants’, of Earth, and, perhaps, of other planets, e.g., of other planets beyond our solar system.

It will also have to include present, human[oid]s-led ‘meta-societies’ -- internalizing multiple plant and animal mere societies, mutually incorporating/internalizing, and mutually-domesticating, one another, co-evolving to mutual and ‘co-amplifying’ Darwinian ‘fitness-symbiosis’ [mutual reproductive rate enhancement], and thereby producing the ‘super-society’ that constitutes contemporary [Terran] humanity. Moreover, the ontological category of humanity includes, as “beings”, all of the “things” of human “culture”, all of ‘the human phenome’ -- all of “material culture”, but also including all of the “intangible”, shared “mental objects” of human languages, etc.; of shared ideas; of “memes” in general. Admitting, as “objects”, as “beings”, as “things” in their own right, those mentally-perceived qualities shared in common among every 2 or more of the elements so far evoked, we must include also [the set of] all of their subsets. That means all of the elements of the “power-set”, of this base “Universal Set”, call it U, so far constructed/imagined, & its ‘self-progression’ of ever more “‘rarefied’” qualities, out to some finite stage of this “‘rarefaction’”. Iteration should go on to that stage of “‘rarefaction’” whose subtle qualities are sufficiently perceived to make a “meme”; to enter ‘the human phenome’ --

$$U \rightarrow U \cup 2^U \rightarrow U \cup 2^U \cup 2^{U \cup 2^U} \rightarrow \dots$$

-- those of, namely, the progressively actualized, definitionally self-expanding, but ever-finitary “set of all objects”. Each subset represents the quality shared by all of the members of that subset [some subsets in each ‘self-iteration’ of this “set of all objects” will be redundant, due in part to the involvement of “the empty set”, which we interpret as a symbol for “the presently real but presently unknown”, in many of the subsets].

This set will also have to include all of the presently extant/perceived “‘hybrid’” ‘ideo-physio-ontological units’, i.e., those “‘hybrids’” or “‘syntheses’” that are combinations from among all of the units or elements described above.

So far, many of those elements of “Being”, described above, have at least one “‘quality’” in common: they all involve, at their base, those sub-nuclear “particles” known as quarks and gluons. But this set will have to include, as well, the ontological categories of “time” and of “space”, of “Dark Energy” and of “Dark Matter”, which are not, at least not to our present knowledge, “made of” quarks and gluons. Nominally included as dark matter is the denser-than-neutronium but still finite-density “substance” that, we hypothesize, composes the cores of “black holes”, and that we call ‘holonium’. This set will also have to include among its “elements” the “gravitational waves” that can be generated by coalescences of “black holes” of large mass, and by other cosmological processes. When we cognize this mentally-constructed/imagined “set of all [kinds of] beings”, which we interpret as modeling Hegel’s «arché» category of “Being”, for his Domain of ‘determinateness’, $D = d -- \overset{d}{\mathbb{Q}}_B \equiv \mathbb{B}_d \xrightarrow{\quad} \mathbb{Q}_1$, -- we are, perhaps, at first, made breathless by its vast, if still finite,

but apparently hopelessly ‘un-unifiable’, qualitative diversity [Notational Note: The Domain inheritance of the Being category, when expressed as ‘ $\overset{d}{\mathbb{Q}}_B$ ’, is indicated by the ‘d’ pre-superscript; when expressed as ‘ \mathbb{B}_d ’, by ‘post-subscript’ ‘d’].

This is what *we cognize* when *we view* the “Being” category from the *side* of *its* “multiplicity”, i.e., from *its* “‘inside’”, *imagining* what the *unordered*, “chaotic” collection of *all* of these vastly different *kinds* of *elements* might look like. That is what *we see* when *we look* “*under the hood*” of this *set’s outer container*, *inside* of *its* “*braces*”, *inside* of *its* “‘*sphere*’”, *inside* of *its* “‘*sphere-ical enclosing boundary*’”, if you will.

But what happens when we look at this self-same *set* from the *side* of *its unity*, from *its* “‘*outside*’” -- when we *see only* that *outer container*, that “‘*sphere-ical enclosing boundary*’”, & try to *discern*, from that vantage, the *unifying*, the ‘*unit-ifying*’ *qualitative* character, the *single* *quality*, shared by *all* of the diversity now hidden within?

Per Hegel, and per this set-theoretical interpretation of his category of “Being”, *we see nothing effable*, *we see* only an “*intension*” so distilled, diluted, rarefied by the vast diversity within the *set* model of Hegel’s “Being”, that there is literally *nothing* *we* can *say* about *any* uni-vocal *quality* expressed by this *set*, except “Being”, which thus means *nothing specific*. Thus, this “*everything*” *set* represents, *viewed from without*, Hegel’s category of Being’s opposite, “Nothing”:

$\mathbb{B}_{\mathbb{B}} \vdash \equiv \mathbb{B}_{\mathbb{N}} \equiv \mathbb{N} \dashv \mathbb{B}$, *net* result of *our* immanent critique/reflexion of the category denoted by \mathbb{B} .

We can therefore find *ourselves vacillating*, in *our* evaluation of this *set*, looking *UNDER its* “‘*hood*’”, and *seeing only exhaustive qualitative diversity* -- *seeing* “‘everything’” -- then *looking* again, *AT its* “‘*hood*’”, & *seeing* “Nothing”, *no* discernible *unitary* *quality*, then *looking* again, *seeing* “‘everything’” again, & so on, in seemingly interminable, & soon monotonous, *oscillation* between the categorial characterizations & determinations of “Being” &/versus “Nothing”.

Per Hegel, as *we* come to *notice*, after some number of repetitions of this “stuck” cycle, and to *cognize* [and perhaps to be *annoyed* and *innervated* and *disgusted* by], this *vacillation*, *we* come to *see it* as constituting a *third* category in *its* own right, a separate, *third* “determination”, that *combines* “Being” & “Nothing” in the form of an *oscillatory, alternating movement*, back & forth between the *two*. This *third* category, Hegel calls “*beComing*”. And, per Hegel, this *third* category has *two* species, *two* sub-categories, *two* “moments”. *Our mental movement* away from “Being”, [back] to “Nothing”, Hegel calls “*Ceasing-to-Be*”, i.e., ‘*Ceasing-being-Being*’. *Our mental movement* away from “Nothing” back to “Being”, he calls “*Coming-to-Be*”, i.e., ‘*Coming-back-to-Being*’. The *latter* sub-category, *we* notate as $\mathbb{B}_{\mathbb{N}}$ [conversion of “Nothing”

into “Being”, catalyzed by “Being”], the *former* as $\mathbb{B}_{\mathbb{N}}$ [conversion of “Being” into “Nothing”, catalyzed by “Nothing”], solving for both as --

$\mathbb{B}_{\mathbb{N}} \vdash \equiv \mathbb{B}_{\mathbb{C}} \equiv \mathbb{C} \dashv \mathbb{B}$, -- since $\mathbb{B}_{\mathbb{N}} \vdash \mathbb{B}_{\mathbb{N}}$, & since $\mathbb{B}_{1+2} = \mathbb{B}_3 = \mathbb{B}_{2+1}$.

This set-theoretic model of Hegel’s *founding dialectic* is even a case of «*aufheben*» ‘*meta-unit-ization*’ *dialectic*, of a special sort. It is *not*, in this *unusual* case, that the *second* category, or “*second* determination”, “Nothing”, is made up out of *multiple units*, *each* of which is a ‘*meta-unit*’, made up out of [some *part* of] the vastly many *units* that make up the *first* category, or “*first* determination”, “Being”. Instead, the “Nothing” category is *itself* also a *single meta-unit*, a *single unit*, made up out of the *totality* of the heterogeneous multiplicity of *ALL OF* the *units/elements* of the “Being” category. *Perhaps surprisingly*: in this sense, the “Nothing” category is an «*aufheben*» *simultaneous negation/-elevation /conservation* of *all* of the *units* of/in the “Being” category, *all at once*; is the categorial, set-theoretical, “*intensional*” *unification* of that *total* “*extension*”, of that “Being” *set*, all of this residing in Hegel’s “*Domain*” of “*determinateness*”, *D* = *d*. Our ‘*dialectical-ideographical meta-model*’ for Hegel’s *opening dialectic* becomes --

$$\mathbb{H}_{\mathbb{S}}^{\mathbb{d}} = (\mathbb{B}_{\mathbb{d}})^3^{\mathbb{S}}:$$

-- for *step* *s* = 0: $\mathbb{H}_{\mathbb{0}}^{\mathbb{d}} = (\mathbb{B}_{\mathbb{d}})^3^0 = (\mathbb{B}_{\mathbb{d}})^1 = \mathbb{B}_{\mathbb{d}}$, [re-]affirmation of the «*arché*»;

-- for *step* *s* = 1: $\mathbb{H}_{\mathbb{1}}^{\mathbb{d}} = (\mathbb{B}_{\mathbb{d}})^3^1 = (\mathbb{B}_{\mathbb{d}})^3 \vdash \equiv \mathbb{B}_{\mathbb{d}} \dashv \mathbb{B} \dashv \mathbb{N} \dashv \mathbb{B}_{\mathbb{N}}$.

For a diagrammatic expression of this *dialectic*, see --

http://www.dialectics.org/dialectics/Glossary_files/Glossary.The_Dialectic_of_Hegel's_Logik_Book_One_Chapter_One_First_Deepest_Triad.27JAN2014.jpg

PART II. ASSESSMENT.

Commentary on *Two Written Summaries of Hegel's 'Dialectic Algorithm', as Published by Hegel himself.*

During his lifetime, Hegel published at least two major summaries of his *dialectical method*.

What we have termed, above, the “‘*evoluteness*’” *feature* of *dialectic*, among *others*, is elaborated upon further, by Hegel, in the *final* section of his «*Wissenschaft der Logik*», the section entitled [in English translation] “The Absolute Idea”.

As noted in the **Introduction**, Engels once took an unfortunate and misleading cheap shot at Hegel’s work when he wrote, of the “Absolute Idea”, that it is “...only absolute insofar as he has absolutely nothing to say about it”.¹

In fact, the content of this *final* section, admittedly a *relatively* brief one, for Hegel, is no nothingness or nullity.

Indeed, that content is a summary statement of Hegel’s concept of the overall unity of his *dialectical* «*Logik*», including a partial specification of what Hegel holds to be a *universal method* for the systematic presentation of *dialectically-comprehended content*.

Hegel stated a similar summary at the very *outset* of the same work, «*Wissenschaft der Logik*», in the *initial* section of its “BOOK ONE: THE DOCTRINE OF BEING”, i.e., in the section entitled “With What Must the Science Begin?”.

In this, *final* main-body part of this essay, **we** will address both of these summaries, both in relation to the transcript statement of Hegel’s “‘*algorithm*’” for *dialectic*, quoted and analyzed in this essay’s **Part I.**, and in relation to the **NQ algebra for dialectic**, in terms of the degree to which **it** captures the *features of dialectic* cited in these two summaries, published by Hegel.

What we call ‘*the evoluteness passage*’ of the *final* section of Hegel’s «*Logik*» is extracted below, in **2** distinct, and illuminatingly variant translations into English from the German original. The **1st** of these **2** translations is as follows²:

(A.) “We have shown that the determinateness which was a result is itself, by virtue of the form of simplicity into which it has withdrawn, a fresh beginning; as this beginning is distinguished from its predecessor precisely by that determinateness, cognition rolls onward from content to content.”

“First of all, this *advance* is determined as beginning from simple[, and abstract -- HdN] determinatenesses, the succeeding ones becoming ever *richer and more* [HdN: *thought-*]*concrete*.”

“For the result contains its beginning [HdN: as \mathfrak{Q}_C is «*aufheben*»-“‘contained’” in $\mathfrak{Q}_{CC} \models \mathfrak{Q}_M$, and in \mathfrak{Q}_{MC}] and its course has enriched it by a fresh determinateness [HdN: as $\mathfrak{Q}_C^0 = \mathfrak{Q}_C^1$ is “‘freshened’” by a new determinateness/determination/*quality*/category, that for/of ‘*Money-ness*’, in $\mathfrak{Q}_C^1 = \mathfrak{Q}_C^2 \models \mathfrak{Q}_C \text{ -- } \mathfrak{Q}_M$, i.e., by \mathfrak{Q}_M , and as $\mathfrak{Q}_C^2 = \mathfrak{Q}_C^3 \models \mathfrak{Q}_C \text{ -- } \mathfrak{Q}_M$, is, in its turn, “‘refreshed’” by a “‘fresh’” determinateness/*quality*/category, that for/of ‘*circulation-ness*’, in $\mathfrak{Q}_C^3 \models \mathfrak{Q}_C \text{ -- } \mathfrak{Q}_M \text{ -- } \mathfrak{Q}_{MC}$, i.e., by \mathfrak{Q}_{MC}].”

“The *universal* [HdN: E.g., the presentees’ experiential knowledge of the *Domain* as a whole, even if it initially exists as “a chaotic conception of the whole” [cf. Marx], i.e., as ‘*untheorized*’, ‘*unsystematic*’ “‘knowledge’” -- which is, precisely, to be *systematically* ‘re-presented’ and theorized, *dialectically*] constitutes the foundation [HdN: The presentees’ “chaotic” familiarity remains the basis for every *dialectical* transition/advance to make sense to those presentees]; the *advance* is therefore not to be taken as a *flowing* from one *other* to the next *other* [HdN: In our first example, \mathfrak{Q}_M is “other” to \mathfrak{Q}_C , and \mathfrak{Q}_{MC} is “other” to both \mathfrak{Q}_C and \mathfrak{Q}_M , but none of them is “other” to their *Domain*, that of the Capitalis-System, the “‘universal’” for all of them -- their universe-of-discourse -- and each of them is a qualitatively different, “‘holographic’”/“‘holonomic’”³ particular[ization] of that whole/*Domain*/univers[e][al], and is “‘internally’”, ‘ideo-meta-genealogically’ related to each of the/*its* “‘others’”].”

¹[See Frederick Engels, *Ludwig Feuerbach and the End of Classical German Philosophy* -- <https://www.marxists.org/archive/marx/works/1886/ludwig-feuerbach/ch01.htm>].

²[*Hegel's Science of Logic*, H. D. Lewis, editor, A. V. Miller, translator, Amherst, NY: Humanity Books, **1969**, p. **840**, underline emphasis by HdN, other emphases as in original, paragraph partitioning by HdN].

³[Cf. David Bohm, *Wholeness and the Implicate Order*, Boston, MA: Routledge & Kegan Paul, **1980**, pp. **156-181**.].

“In the absolute method the Notion [HdN: Hegel’s special version of “The Concept”, of *philosophically-perfected*, or “‘absolute’”, concepts-in-general, or categories-in-general], maintains itself in its otherness, the universal in its particularization, in judgement and reality; at each stage of its further determination it [HdN: “it” means the “absolute method” of presentation, i.e., the human agent/presenter who wields this “‘absolute’”, universal method] raises the entire mass of its preceding content, and by its dialectical advance it not only does not lose anything, or leave anything behind [HdN: The “‘evoluteness’” feature of *dialectic* per Hegel], but carries along with it all that it has gained [HdN: E.g., stage/«*dynamis*» **1**, $\mathbb{Q}_C^1 = \mathbb{Q}_C \rightarrow$ stage **2**, $\mathbb{Q}_C^2 \models \mathbb{Q}_C \oplus \mathbb{Q}_M \rightarrow$ stage **3**, $\mathbb{Q}_C^3 \models \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \rightarrow \dots$], and inwardly enriches and consolidates itself [HdN: On the latter phrase, see commentary below].”

Commentary on (A). In a systematic, *dialectical* presentation of a theory “‘explaining’” a given **Domain**, each new/expanded stage of the categorial ‘cumulum’ modeling that **Domain**, e.g., $\mathbb{Q}_C^2 \models \mathbb{Q}_C \oplus \mathbb{Q}_M$, and $\mathbb{Q}_C^3 \models \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC}$, is initially confronted, by the presentees of a presenter who uses this “absolute method” of presentation, as a multiplicity of disparate, mostly unintegrated terms/qualities/categories/determinations. But once these presentees have comprehended a given such new-stage ‘cumulum’, including the unity of its diversity, it becomes, for them, simple again, becomes “‘withdrawn [back] into simplicity’” for them; becomes a ‘re-simplicity’, a new, univocal ‘singleness’, almost a [neo-]«*arché*» in its own right. That ‘multi-ontic cumulum’ becomes a new “‘complex unit[y]’”, from which their process of [directed] discovery, e.g., their presenter’s presentation, can [re-]launch anew. That is “‘the form of simplicity into which it [HdN: “it” = The resulting determinateness(es)/qualit(y)(ies)] has withdrawn’”, as a result of the presentees’ comprehending that new ‘cumulum’, thereby making that result “‘a fresh beginning’”. That process of comprehension, of ‘re-simplification’, of ‘re-univocal-ization’, sometimes including the ‘single-naming’ of the complex/compound multiplicity of qualities of that new-stage ‘categorial cumulum’, is the process by which the presentees’ comprehension of each step of an ‘absolute-methodic’ presentation “‘inwardly enriches and consolidates itself’”.

The **2nd** of the **2** translations of the same passage from the final, “Absolute Idea” chapter of Hegel’s «*Logik*», is the following*:

(B.) “It has been shown that the determinateness which was result is itself a new beginning by virtue of the form of simplicity into which it has collapsed; and, since this beginning is distinct from its antecedent by precisely this determinateness, cognition rolls forward from content to content.”

“This progress determines itself, first, in this manner, that it begins from simple determinatenesses and that each subsequent one is richer and more [HdN: *thought*]-concrete.”

“For the result contains its beginning [HdN: Each stage’s result contains the ‘«*arché*»-category’, as well as its immediate-predecessor ‘cumulum’ of categories], and the [HdN: *self*]-development of the beginning [HdN: i.e., the “‘self-reflexion’” of the ‘«*arché*»-category’] has made it richer by a new determinateness. The universal is the foundation [HdN: I.e., the **Domain** is the *foundation*; in our example, the **Domain** is **D** = «*K*», the ‘«*Kapital*»-System’ **Domain**]; the progress therefore must not be taken as a flow from Other to Other.”

“In the absolute method the Notion preserves itself in its otherness, and the universal in its particularization, in the Judgement and in reality; it raises to each next stage of determination the whole mass of its antecedent content, and by its dialectical progress not only loses nothing and leaves nothing behind, but carries with it all that it has acquired, enriching and concentrating itself upon itself.”

Commentary on (B). Above Hegel states the epitome of what we mean by an ‘evolute progression’ of concepts or of categories -- of [qualitative] “‘determinations’”: “‘For the result contains its beginning, and the development of the beginning has made it richer by a new determinateness. ... In the absolute method the Notion preserves itself in its otherness, and the universal in its particularization, in Judgement and in reality; it raises to each next stage of determination the whole mass of its antecedent content, and by its dialectical progress not only loses nothing and leaves nothing behind, but carries with it all that it has acquired...’”.

*[Hegel’s *Science of Logic*, H. D. Lewis, editor, W. H. Johnston and L. G. Struthers, translators, New York, NY: Humanities Press, Inc., **1966**, pp. **482-3**, underline emphasis and paragraph partitioning added by HdN.]

Note also that, once again, this stage **3** “result”, $\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC}$, “contains its beginning”, here, \mathbb{Q}_C . It does so not only in the sense that $\mathbb{Q}_C \sqsubset \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC}$, but also in the sense that, in the stage **3** “development of the beginning”, $\mathbb{Q}_C^1 \mathbb{Q}_C^3 = \mathbb{Q}_C^3 = \mathbb{Q}_C^2 \otimes \mathbb{Q}_C^1 \supset \mathbb{Q}_C$, and in the further, syntactic, sense that $\mathbb{Q}_C^3 = \mathbb{Q}_C \oplus \mathbb{Q}_{CC} \oplus \mathbb{Q}_{CCC} \supset \mathbb{Q}_C$.

- Stage **4** [«dynamis» **4**], 1st evocation of category \mathbb{Q}_K , of “«Kapitals»” [as “self-expanding [Monetary] values” [cf. Marx]]:

$$\begin{aligned} \mathbb{Q}_C^{2^2} &\approx \mathbb{Q}_C^4 = (\mathbb{Q}_C^2)^2 \vdash \equiv (\mathbb{Q}_C \oplus \mathbb{Q}_M)^2 = \\ &(\mathbb{Q}_C \oplus \mathbb{Q}_M) \otimes (\mathbb{Q}_C \oplus \mathbb{Q}_M) = \\ &(\mathbb{Q}_C \oplus \mathbb{Q}_M) \oplus (\mathbb{Q}_M \oplus \mathbb{Q}_{CM}) \oplus (\mathbb{Q}_C \oplus \mathbb{Q}_{MC}) \oplus (\mathbb{Q}_M \oplus \mathbb{Q}_{MM}) = \\ &\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \oplus \mathbb{Q}_{MM} = \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \oplus \mathbb{Q}_K; \text{ in this stage, i.e., in} \end{aligned}$$

stage **4** of the “determination” of Domain **D** = «K», the Domain of the ‘«Kapitals»-System, once again, the “result”, here $\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \oplus \mathbb{Q}_K$, “contains its [own] beginning”, here \mathbb{Q}_C , in multiple senses --

$$\begin{aligned} \text{(a.) } \mathbb{Q}_C &\sqsubset \mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \oplus \mathbb{Q}_K; \\ \text{(b.) } \mathbb{Q}_C^{2^2} &\approx \mathbb{Q}_C^4 = (\mathbb{Q}_C^2)^2 = (\mathbb{Q}_C^1 \otimes \mathbb{Q}_C^1)^2 \supset \mathbb{Q}_C^1, \text{ and, syntactically, as;} \\ \text{(c.) } \mathbb{Q}_C &\sqsubset \mathbb{Q}_{CC}, \mathbb{Q}_C \sqsubset \mathbb{Q}_{CCC}, \mathbb{Q}_C \sqsubset \mathbb{Q}_{CCCC}, \text{ so: } \mathbb{Q}_C \sqsubset \mathbb{Q}_C \oplus \mathbb{Q}_{CC} \oplus \mathbb{Q}_{CCC} \oplus \mathbb{Q}_{CCCC} = \\ &(\mathbb{Q}_{1C} \oplus \mathbb{Q}_{2C} \oplus \mathbb{Q}_{3C} \oplus \mathbb{Q}_{4C}) \mapsto [\mathbb{Q}_1 \boxplus \mathbb{Q}_2 \boxplus \mathbb{Q}_3 \boxplus \mathbb{Q}_4]. \end{aligned}$$

“The [further] development of the beginning”, i.e., of \mathbb{Q}_C , has made the stage **4** “result” [relative to the stage **3** “result”] “richer by a new determinateness”, namely, richer by “addition” of a, “new”, **4th** category/-determination -- by the “addition” of $\mathbb{Q}_K \vdash \equiv \mathbb{Q}_{MM}$.

This “development”, the transition from stage **3** to stage **4**, has also “raised”, into the “resulting” stage **4** ‘categories cumulum’ -- i.e., up to the “next stage of determination” -- “the whole mass of its antecedent content” -- e.g., “the whole mass” of its stage **3** content, namely, $\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC}$ -- and, “by its dialectical progress”, has “not only lost nothing and left nothing behind”, but has “carried with it all that it has acquired” -- in stage **1**, \mathbb{Q}_C , in stage **2**, \mathbb{Q}_M , and in stage **3**, \mathbb{Q}_{MC} -- on and up into the stage **4** “result” of this “[self-]development [of the «arché»-category]”, namely, $\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \oplus \mathbb{Q}_K$ --

$$(\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC} \oplus \mathbb{Q}_K) \supset (\mathbb{Q}_C \oplus \mathbb{Q}_M \oplus \mathbb{Q}_{MC}).$$

We can see also, again, in this stage **4** “result”, that “the determinateness which was a result”, namely,

$\mathbb{Q}_C \rightarrow \mathbb{Q}_M \rightarrow \mathbb{Q}_{MC} \rightarrow \mathbb{Q}_K$, “is itself, by virtue of the form of simplicity into which it has withdrawn”,

i.e., by virtue of the ‘re-simple’ form $\underline{\mathbb{H}}_2[= (\mathbb{Q}_C)^{2^2} \approx \mathbb{Q}_C^4 \approx (\mathbb{Q}_C \rightarrow \mathbb{Q}_M \rightarrow \mathbb{Q}_{MC} \rightarrow \mathbb{Q}_K)]$,

“a new/fresh beginning”, i.e., the *base* upon which the next [not “stage”, but] **Step, Step 3**, $\underline{\mathbb{H}}_3$, such that --

$\underline{\mathbb{H}}_3 = (\mathbb{Q}_C)^{2^3} \approx (\mathbb{Q}_C^4)^2 \approx (\mathbb{Q}_C \rightarrow \mathbb{Q}_M \rightarrow \mathbb{Q}_{MC} \rightarrow \mathbb{Q}_K)^2$ -- begins.

We can see as well that, “as this beginning is distinguished from its predecessor precisely by that determinateness”, namely, here, by the new “determination”, \mathbb{Q}_K , “cognition rolls [\rightarrow] onward from content to content”, i.e. --

$\mathbb{Q}_C \rightarrow \mathbb{Q}_C \rightarrow \mathbb{Q}_M \rightarrow \mathbb{Q}_C \rightarrow \mathbb{Q}_M \rightarrow \mathbb{Q}_{MC} \rightarrow \mathbb{Q}_C \rightarrow \mathbb{Q}_M \rightarrow \mathbb{Q}_{MC} \rightarrow \mathbb{Q}_K \rightarrow \dots$

We can see in this stage, as in previous stages, that “first of all, this advance is determined as beginning from simple determinatenesses” -- ultimately, here, as beginning from \mathbb{Q}_C , & that “the succeeding determinations become ever

richer”, i.e., the “determination” $\mathbb{Q}_K \models \mathbb{Q}_{CCCC}$, is “richer” than the “determination” $\mathbb{Q}_{MC} \models \mathbb{Q}_{CCC}$, which is “richer” than the “determination” $\mathbb{Q}_M \models \mathbb{Q}_{CC}$, which is “richer” than the *ultimate* “beginning” determination for this **Domain**, \mathbb{Q}_C .

These “becoming-ever-richer determinations” concurrently “become ever more [HdN: *thought*-]concrete” -- i.e., become *less abstract*: ever closer to the phenomena that *we* see “on the surface of *our* society” [cf. Marx].¹

Thus, the category of “**«Kapitals»**” -- which *implicitly* “contains”, or *experientially* and *conceptually* presupposes, *both* **Commodity**[-**«Kapitals»**]² & **Money**[-**«Kapitals»**]³, and their ‘*co-Circulations*’, what Marx called “*The Circulation of the Total Social Capital*”⁴ -- names a more complex, more detailed category, or ‘container of *our* experience’, than does the “**Monies-mediated Circulations of Commodities**”. In turn, the category which we named the “**Monies-mediated Circulations of Commodities**” stands as a more complex, more detailed -- stands as more ‘*thought*-concrete’ as a ‘container/reminder of *our* experience’ than does the “**Monies**” category, since *the former* “contains” *both* the “**Monies**” category & the “**Commodities**” category. Lastly, for this example, the “**Monies**” category stands for a more complex, more detailed, less abstract[ing], ‘container/reminder of *our* recurring *experiences*’ of *our* ‘Capitals-society’ than does the “**Commodities**” category, *the former* being less omissive of *our* central *experience* of that society -- the *experience* of the *cash nexus* -- than is the *latter*.

(C.) We conclude this section by quoting the following passage from the writings of symbolic *formal* logic pioneer Charles Saunders Peirce, the “logic” of which reads a lot like the opening of Hegel’s *dialectical* **«Logik»**: “The first is that whose being is simply in itself, not referring to anything nor lying behind anything. The second is that which is what it is by force of something to which it is second. The third is that which is what it is owing to things between which it mediates and which it brings into relation to each other.”⁵

¹[First ¶, Karl Marx, *«Das Kapital»*, Volume III, “Shapes of the Reproductions-Process of Capitals in Total”, Part I, Chapter I., NY: New World, 1967, p. 25].

²["The Circuit of Commodity-Capital" is the title of Chapter III. of Volume II, “The Circulations-Process of Capitals”, of *«Das Kapital»*, by Karl Marx.].

³["The Circuit of Money-Capital" is the title of Chapter I. of Volume II, “The Circulations-Process of Capitals”, of *«Das Kapital»*, by Karl Marx.].

⁴["The Reproduction and Circulation of the Aggregate Social Capital" is the title of Part III. of Volume II of *«Das Kapital»*, by Karl Marx.].

⁵[Charles Saunders Peirce, “A Guess at the Riddle”, p. 183 [1.3.56] in *The Collected Papers of Charles Saunders Peirce*, Cambridge: Harvard Univ. Press, 1974. Peirce is aware of Hegel’s work, but also pointedly disavows Hegel’s philosophy, in this same text, p. 193 [1.3.69, *ibid.*]. Peirce’s “nor lying behind anything” would be more Hegelian if it read, instead, “nor having anything else lying behind it”].

At this point, we will “‘shift gears’”, from the ‘*stages-based*’ [or “‘*«dynamis»*”] exposition format, to **our** more standard, ‘**Dyadic Seldon Function**’, ‘*steps-based*’ [‘*meta-«dynamis»*’] exposition format. We can, thereby, abbreviate this part of our **presentation**, by “‘cutting to the chase’”. That is, via this next, **s = 3**, **step**, we will jump to the **finality** of this **dialectical categorial progression** ‘**presentation meta-model**’, narrating **its** ‘fitnesses’ to Hegel’s “‘**algorithm**”’ for **dialectic** in **its final** iteration.

• **Step 3** [‘*meta-«dynamis»*’ **3**], **1st** evocation of categories \mathcal{Q}_{KC} , \mathcal{Q}_{KM} , \mathcal{Q}_{KMC} , & \mathcal{Q}_{KK} , **finality** of the «**K**» **Domain**:

$$\begin{aligned} \underline{\mathcal{H}}_3 &= (\mathcal{Q}_C)^{2^3} \approx (\mathcal{Q}_C^4)^2 \approx (\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K)^2 = \\ &= (\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K) \otimes (\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K) = \text{[by applying Miguel's rule}^1 \text{ --]} \\ &= (\mathcal{Q}_K \otimes \mathcal{Q}_C) \oplus (\mathcal{Q}_K \otimes \mathcal{Q}_M) \oplus (\mathcal{Q}_K \otimes \mathcal{Q}_{MC}) \oplus (\mathcal{Q}_K \otimes \mathcal{Q}_K) = \\ &= (\mathcal{Q}_C \oplus \mathcal{Q}_{KC}) \oplus (\mathcal{Q}_M \oplus \mathcal{Q}_{KM}) \oplus (\mathcal{Q}_{MC} \oplus \mathcal{Q}_{KMC}) \oplus (\mathcal{Q}_K \oplus \mathcal{Q}_{KK}) \\ &= (\mathcal{Q}_C \oplus \mathcal{Q}_{KC} \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{KM} \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_{KMC} \oplus \mathcal{Q}_K \oplus \mathcal{Q}_{KK}) \end{aligned}$$

[the latter transition via ‘*categorial ordinality*’ and via ‘*categorial additive commutativity*’²].

Thus, in **step s = 3**, we have $\underline{\mathcal{H}}_3 = (\mathcal{Q}_C)^{2^3} \approx (\mathcal{Q}_C^4)^2 \approx (\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K)^2$,
i.e., as -- $(\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K) \otimes (\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K) \equiv$
C,M,MC,K $(\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K)$.

This means the **immanent critique/negation** [the **self-critique/self-negation**] of $(\mathcal{Q}_C \oplus \mathcal{Q}_M \oplus \mathcal{Q}_{MC} \oplus \mathcal{Q}_K)$ as to **its** representing an adequate, ‘categorial cumulum meta-model’ summary of **our experience** of **our present** “state of society” [cf. Marx], namely, that of the ‘«**Kapitals**»-System’.

The “‘result’” of **our** ‘immanent critique algorithm’ is the syntactic generation of **four** additional “‘algebraic’” ‘category-symbols’ -- i.e., of **four** ‘category-symbols’ that, as they first emerge for us from their algorithmic birth-process, are initially of **unknown** meaning for us -- namely, \mathcal{Q}_{KC} , \mathcal{Q}_{KM} , \mathcal{Q}_{KMC} , & \mathcal{Q}_{KK} .

If we successfully solve for the meaning of these **four** further ‘category-symbols’, then we will have evoked **four** additional categories needed to more adequately describe **our** ‘Capitals-System’ **experience**, such as can be provided, by **our** algorithm, for **our** categorial progression **presentation** of **Domain D** = «**K**». This sample presentation uses the category of **Commodities** as its ‘«**arché**»-category’, whereby we “solve for” the meanings of its subsequent ‘category-symbols’ by means of ‘**connotational entailment**’³.

¹[See: http://www.dialectics.org/dialectics/Vignettes_files/v.4.4,Part_II,Miguel_Detonaciones,F.E.D.,_Vignette_4.The_Goedelian_Dialectic_of_the_Standard_Arithmetics,last_updated_29NOV2012.pdf, p. II-8].

²[See: http://www.dialectics.org/dialectics/Briefs_files/Hermes_de_Nemores,F.E.D.,_Preface_to_New_Guest_Author_E.D.,_Brief_6,revision,posted_20FEB2013.pdf, p. 2].

³[See: http://www.dialectics.org/dialectics/Glossary_files/Glossary,E._D._Definition,'Connotational_Entailment',19SEP2015.jpg].

Before we pursue the solutions for these *four* further terms, first note that, in this step, i.e., in step **s = 3**, of the “determination” of Domain **D** = «K.», the Domain of the ‘«Kapitals»-System’, once again, the “‘result’”, here $\mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K} \oplus \mathbb{KC} \oplus \mathbb{KM} \oplus \mathbb{KMC} \oplus \mathbb{KK}$, “‘contains its [own] beginning’”, here \mathbb{C} , again, in multiple senses --

- (a.) $\mathbb{C} \sqsubset \mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K} \oplus \mathbb{KC} \oplus \mathbb{KM} \oplus \mathbb{KMC} \oplus \mathbb{KK}$;
- (b.) $\mathbb{C}^{2^3} \approx \mathbb{C}^8 = (\mathbb{C}^4)^2 = (\mathbb{C}^1 \otimes \mathbb{C}^1 \otimes \mathbb{C}^1 \otimes \mathbb{C}^1)^2 \supset \mathbb{C}^1$, and, syntactically, as;
- (c.) $\mathbb{C} \sqsubset \mathbb{CC}, \mathbb{C} \sqsubset \mathbb{CCC}, \mathbb{C} \sqsubset \mathbb{CCCC} \sqsubset \mathbb{CCCCC} \sqsubset \mathbb{CCCCCC} \sqsubset \mathbb{CCCCCCC}$, and so on, so that --
- $$\mathbb{C} \sqsubset \mathbb{C} \oplus \mathbb{CC} \oplus \mathbb{CCC} \oplus \mathbb{CCCC} \oplus \mathbb{CCCCC} \oplus \mathbb{CCCCCC} \oplus \mathbb{CCCCCCC} \oplus \mathbb{CCCCCCCC} \dots$$
- $$= (\mathbb{1C} \oplus \mathbb{2C} \oplus \mathbb{3C} \oplus \mathbb{4C} \oplus \mathbb{5C} \oplus \mathbb{6C} \oplus \mathbb{7C} \oplus \mathbb{8C}) \Leftrightarrow$$
- $$[[\mathbb{1} \boxplus \mathbb{2} \boxplus \mathbb{3} \boxplus \mathbb{4} \boxplus \mathbb{5} \boxplus \mathbb{6} \boxplus \mathbb{7} \boxplus \mathbb{8}]].$$

“‘The [further] development *of* the beginning’”, i.e., *of* \mathbb{C} , has made this step **3** “‘result’” [relative to the stage **4** “‘result’”] “‘richer by new determinatenesses’”, namely, richer by “‘addition’” of **4** “‘new’”, categories/determinations, i.e., by the “‘addition’” of $\mathbb{KC}, \mathbb{KM}, \mathbb{KMC}, \& \mathbb{KK}$.

This “development”, the transition from stage **4** to step **3**, has also “‘raised’”, into the “‘resulting’” step **3** ‘categories cumulum’, “‘the whole mass of its antecedent content’” -- e.g., “‘the whole mass’” of its stage **4** content, namely, $\mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K}$ -- and, “‘by its dialectical progress’”, has “‘not only lost nothing and left nothing behind’”, but has “‘carried with it all that it has acquired’” -- in stage **1**, \mathbb{C} , in stage **2**, \mathbb{M} , in stage **3**, \mathbb{MC} , & in stage **4**, \mathbb{K} -- on & “‘up’” into the step **3** [i.e., into the stage **8**] “‘result’” of this “‘development’”, i.e., it has “‘carried’” *all* of $\mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K}$, “‘up’” into step **3** --

$$\mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K} \sqsubset \text{[i.e., “is contained in” --]}$$

$$\mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K} \oplus \mathbb{KC} \oplus \mathbb{KM} \oplus \mathbb{KMC} \oplus \mathbb{KK}.$$

We can see also, again, in this step **3** “‘result’”, that “‘the determinateness which was a result’”, namely --

$$\mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K} \oplus \mathbb{KC} \oplus \mathbb{KM} \oplus \mathbb{KMC} \oplus \mathbb{KK}$$

-- “‘is ..., by virtue of the form of simplicity into which it has withdrawn’”, i.e., by virtue of the ‘re-simple’ form --

$$\underline{\mathbb{H}}_3$$

-- i.e., which implies/expands to: $\mathbb{C}^{2^3} \approx \mathbb{C}^8 \approx$

$$\mathbb{C} \oplus \mathbb{M} \oplus \mathbb{MC} \oplus \mathbb{K} \oplus \mathbb{KC} \oplus \mathbb{KM} \oplus \mathbb{KMC} \oplus \mathbb{KK}$$

$$\underline{\mathbb{H}}_4 = (\textcircled{\scriptsize \textcolor{red}{c}})^{2^4} = (\textcircled{\scriptsize \textcolor{violet}{8}\textcolor{brown}{c}})^2 =$$

-- begins, if, in this particular case, we were to decide to retroactively expand our **D**omain, to encompass also the new, successor **D**omain that begins with \mathfrak{Q}_{KK} .

$$\langle \hat{q} \rangle \rightarrow$$
$$\left(\left(\text{C} \right) \oplus \left(\text{M} \right) \right) \rightarrow$$

The diagram shows a sequence of transformations between two states. The first state is represented by a sequence of nodes: a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, and a blue circle with a white dot. The second state is represented by a sequence of nodes: a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, a blue circle with a white dot, a green circle with a white dot, and a blue circle with a white dot. The sequence of transformations is labeled C, M, MC, C, M, MC, C, M, MC, K, ...

These “‘*becoming-ever-richer determinations*’” concurrently “‘*become ever more [HdN: *thought*]-concrete*’” -- i.e., become *less abstract*: ever closer to phenomena that *we experience* “‘on the surface of *our* society’” [cf. Marx].

Thus, the -- here -- as yet unsolved, or “‘algebraic’”, ‘category-symbol’, denoted by \mathcal{Q}_{KK} -- which implies the [both practical and theoretical] “‘self-critique’”, the “‘immanent critique’”, or the “‘aufheben» self-negation’, of the “‘«Kapital»-relation’” as predominating “social relation of production” [Marx]* -- names a more complex, more detailed category, than do the ‘category-symbols’ denoted by \mathcal{Q}_{KC} , \mathcal{Q}_{KM} , & \mathcal{Q}_{KMC} , each of which presents a combination of less complex categories/determinations *relative* to what ‘category-symbol’ \mathcal{Q}_{KK} presents. In turn, the ‘category-symbol’ denoted by \mathcal{Q}_{KMC} exhibits more determinations than does either ‘category-symbol’ \mathcal{Q}_{KM} or ‘category-symbol’ \mathcal{Q}_{KC} . Similarly, the here-*not*-yet-solved ‘category-symbol’ \mathcal{Q}_{KM} exhibits a more complex, more detailed determination, in the form of ‘ \mathcal{Q}_M ’, than does ‘category-symbol’ \mathcal{Q}_{KC} , in the form of ‘ \mathcal{Q}_C ’.

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The category of **Commodities** is a “‘circulations-process’”, ‘circulations-value-form’ category, and **not** a “‘productions-process’”, “‘Productive Capital’”¹ category. As a result, this ‘presentation meta-model’ is limited to the ‘circulations-categories’ of **our** Capitals **experience**, **eliding** the ‘productions-process categories’, given the workings of **our** algorithm. These “workings” include the “‘inheritance’” of the “‘circulations-process’” character of the “‘**arché**’-category’ by **all** of the categories which algorithmically “‘follow from’” that “‘**arché**’-category’ in this categorial progression ‘presentation meta-model’”. **We** solve for the meanings of these **four** further ‘category-symbols’ as follows --

- Domain **D** = «**K**» Category 5: $\mathbb{T}_5 \hookrightarrow \mathbb{Q}_{KC}$ $\vdash \equiv$ **Commodity-«Kapitals»** \equiv The **category each** of whose **units** is an inventory of commodities [to be] offered for sale on the market, and that is owned by a single “individual capital” entity; the **present** “‘appropriation’” [cf. Marx], or “‘real subsumption’” [cf. Marx], of the “‘commodities’” ‘socio-ontological category’, \mathbb{Q}_C , by the «**Kapitals**»-‘socio-ontological category’, \mathbb{Q}_K . Critique by \mathbb{Q}_K of \mathbb{Q}_C as, leaving **implicit/ignoring/leaving out** **its** \mathbb{Q}_K involvement;
- Domain **D** = «**K**» Category 6: $\mathbb{T}_6 \hookrightarrow \mathbb{Q}_{KM}$ $\vdash \equiv$ **Money-«Kapitals»** \equiv The **category each** of whose **units** is an aggregate of liquid assets -- monies -- potentially available for re-investment, and that is owned by an “individual capital” entity; the **present** “‘appropriation’” [cf. Marx], or “‘real subsumption’” [cf. Marx], of the “‘monies’” ‘socio-ontological category’, \mathbb{Q}_M , by the «**Kapitals**»-‘socio-ontological category’, \mathbb{Q}_K . Critique by \mathbb{Q}_K of \mathbb{Q}_M as, leaving **implicit/ignoring/leaving out** **its** \mathbb{Q}_K involvement.
- Domain **D** = «**K**» Category 7: $\mathbb{T}_7 \hookrightarrow \mathbb{Q}_{KMC}$ $\vdash \equiv$ **Money-«Kapitals»-Mediated Circulations of Commodity-«Kapitals»** \equiv The category of “‘circulations’” of “‘the total social capital’”², made up out of the interconnected movement of individual-entity ownership-**units** of capital-value, **each** of which moves by a recurring *partial* alternation *among* the “Commodity-Capital”, “Money-Capital”, and “Productive Capital” embodiments of that **unit** of capital-value, owned by a single “individual capital” entity, each **unit** of this **category** being such an individual entity ownership-**unit** of **capital-value-in-motion**; the “‘appropriation’” [cf. Marx], or the “‘real subsumption’” [cf. Marx], of the “‘simple commodity-circulations-process’”, \mathbb{Q}_{MC} , by the «**Kapitals**»-relation, \mathbb{Q}_K . Critique by \mathbb{Q}_K of \mathbb{Q}_{MC} as, leaving **implicit/ignoring/leaving out** \mathbb{Q}_K ;
- Domain **D** = «**K**» Category 8: $\mathbb{T}_8 \hookrightarrow \mathbb{Q}_{KK}$ $\vdash \equiv$ **Self-Critique of the «Kapitals»-Category**. The category of the [self-]critique **of** the capitals category, **by** the capitals category, as to whether or not it completes the description of [the ‘circulations value-forms’ of] the ‘«**Kapitals**»-System’ Domain. I.e., is the capital “social relation of production” [Marx] the [only and] highest “social relation of production” manifested by a zenith-state, mature, fully-developed ‘«**Kapitals**»-System’? It may be the case that this Domain necessarily/predictably **must** contain at least the “‘fractional’” presence of **non-capitalist**, including of successor [as well as predecessor] “social relations of production”, able to accommodate more advanced “social forces of production” [Marx]. This means seeds, embryos, harbingers of **potentially** [‘*dynam[e]is*’] higher, more advanced “social relations of production”, such as those identified by Marx in Chapter XXVII. of volume III of «**Das Kapital**»: joint-stock “‘share capital’”, and the **workers’ capital** of worker-owned producers’ cooperatives. This “‘**immanent critique**’”, “‘**self-critique**’”, or “‘**aufheben**’ **self**-negation”, of the “‘capital-relation’” [Marx] category -- of capital as predominating “‘social relation of [human-societal [self-[re-]]production’” -- is both a “‘**practical critique**”, a critique in objective human action, in human practice, and a scientific, **theoretical critique**, of that core of the ‘«**Kapitals**»-System’. It connotes **all** of the stages & degrees of that **practico-theoretical critique**, the different «**species**» of this «**Genos**». These include the self-criticism of **ourselves as** enacting, & as continually re-enacting, & thus as **embodying**, the capital-relation, in terms of the recurring episodes of mass impoverishment & immiseration of the majority, working-class, population, that inhere in the ‘«**Kapitals**»-System’; of the recurring global economic crises of contracted social reproduction -- the recessions & depressions -- that **it** inherently brings, often followed by global wars & genocides; of the ‘Keynesian state-capitalism’, that arises in response to these depression-crises and their consequences; of the “market failures”, including the deadly pollution “externalities”, which **it** pours down upon the “third party” publics, of, primarily, the working class; & of the vicious racist, ‘genderist’, ethnicist, religionist, etc. ideologies which **its** ruling class inculcates & amplifies so as to “divide & conquer” the majority, working class. This **practico-theoretical critique** includes also the emergence of critical-scientific theories, like that of Marx himself, that we are modeling here, “socialist” theories that foresee the emergence of a successor system to the present system. **It** also includes the recurring waves of attempted reform of the **present**, ‘«**Kapitals**»-System’, e.g., institution of industrial unions by workers; of regulatory bureaucracies within the political state; of laws regulating the length & other aspects of the working day; of minimum wage laws; of systems of public education & of public healthcare rights, of socialized unemployment insurance, & of other social welfare systems. Advanced elements of this **critique** include the self-organization, within the working class, of producers’ cooperatives, within which the workers may elect, & may recall, their managers, by majority vote, & in which the workers collectively own their own means of production [fixed capital], & may share equally in the profits of their cooperative enterprise. **It** also includes joint-stock, capital-equity, share-capital forms of “public ownership” of capital. However, most of all, we take this term, \mathbb{Q}_{KK} , the **net** product of the multiplication $\mathbb{Q}_K \otimes \mathbb{Q}_K \equiv \mathbb{Q}_K \mathbb{Q}_K \equiv \mathbb{Q}_{KK}$, to connote the transition out of & beyond the ‘«**Kapitals**»-System’, into **its successor system**. Obviously, various forms of **state-capitalism** cannot constitute **its successor system**, because they are **still capitalist**. Under our «**species**»-category of “‘state-capitalism’”, we include, as sub-«**species**», many & varied socio-political-economic regimes, e.g., those that prevailed, for a time, in Nazi Germany, in Fascist Italy, in “Soviet” Russia, & that still prevail, e.g., in the Russian Federation, in the Peoples’ “Republic” of China, in “Communist” Cuba, in “Communist” North Korea, & in [so far] “milder”, “mixed” forms, in the U.S., in Europe, & in most of the rest of the world. By including connotations of the **transcendence**, by **practico-theoretical critique**, of this **present** system, this solution brings our categorial description of the Domain of the “‘circulations-categories’” of the ‘«**Kapitals**»-System’ to its end.

¹[“The Circuit of Productive Capital” is the title of Chapter II. of Volume II, “‘The Circulations-Process of Capitals’”, of «**Das Kapital**», by Karl Marx.].

²[As also noted in an earlier footnote, “The . . . Circulation of the Aggregate Social Capital” is the title of Part III. of Volume II of «**Das Kapital**», by Karl Marx.].

This solution for the term \mathcal{Q}_{KK} also exemplifies a 'trans-Hegelian' phenomenon which we call 'synchronic overspill'. By this term, we mean a phenomenon of the "'overflow'" -- predictively, or 'preconstructively' -- of ontological content that originated within a given Domain, into the initial ontological content of an adjacent, "'proximate'" Domain that is the [e.g., expected] diachronic, historical successor Domain to the given Domain, with which the modeling began. By it, we also mean the "'overflow'" -- "'retroductively'", or 'reconstructively' -- into the ontological content of an adjacent, "'proximate'" Domain that is the diachronic, historical predecessor Domain to the Domain with which the modeling began.

We will have more to say, in the sequel, about this 'trans-Hegelian' phenomenon, in dialectical, presentational, categorial-progression 'meta-models' of a given Domain, of 'synchronic overspill', as well as about the 'trans-Hegelian' phenomenon of 'terminating terms', or of 'terminal terms', also exemplified in this ' \mathcal{Q}_{KK} ' solution.

Hegel also addresses, at the outset of his «Logik», in the opening essay of Book One of that work, entitled "With What Must the Science begin?", a further feature of dialectic, one that we call 'archéonic pervasion':

"...the progress from that which forms the beginning is to be regarded as only a further determination of it, hence that which forms the starting point of the development remains at the base of all that follows and does not vanish from it."

"The progress does not consist merely in the derivation of another, or in the effected transition into a genuine other; and in so far as this transition does occur it is equally sublated [HdN: i.e., is equally 'aufheben'-ated] again."

"Thus the beginning . . . is the foundation which is present and preserved [HdN: i.e., is 'aufheben'-ated] throughout the entire subsequent development, remaining completely immanent in its further determinations."*

We can see the way in which this 'meta-model' specifically, and its 'NQ method' in general, reproduces this

feature of dialectic according to Hegel, via the following vantages thereof -- $\underline{H}_3 = \mathcal{Q}_{\mathcal{C}}^{2^3} =$

$$\mathcal{Q}_{\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCCCCC}};$$

$$\underline{H}_0 = \mathcal{Q}_{\mathcal{C}}^{2^0} = \mathcal{Q}_{\mathcal{C}} \rightarrow$$

$$\underline{H}_1 = \mathcal{Q}_{\mathcal{C}}^{2^1} = \mathcal{Q}_{\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CC}} \rightarrow$$

$$\underline{H}_2 = \mathcal{Q}_{\mathcal{C}}^{2^2} = \mathcal{Q}_{\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCC}} \rightarrow$$

$$\underline{H}_3 = \mathcal{Q}_{\mathcal{C}}^{2^3} =$$

$$\begin{aligned} &\mathcal{Q}_{\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCCCC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{CCCCCCCC}} = \\ &\mathcal{Q}_{\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{CC})} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{CC})\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{CC})(\mathcal{CC})} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{CC})(\mathcal{CC})\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{CC})(\mathcal{CC})(\mathcal{CC})} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{CC})(\mathcal{CC})(\mathcal{CC})\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{CC})(\mathcal{CC})(\mathcal{CC})(\mathcal{CC})} \vdash \equiv \\ &\mathcal{Q}_{\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{M}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{MC}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{MM})} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{MM})\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{MM})\mathcal{M}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{MM})\mathcal{MC}} \text{---} \oplus \text{---} \mathcal{Q}_{(\mathcal{MM})(\mathcal{MM})} \vdash \equiv \\ &\mathcal{Q}_{\mathcal{C}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{M}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{MC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{K}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{KC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{KM}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{KMC}} \text{---} \oplus \text{---} \mathcal{Q}_{\mathcal{KK}}. \end{aligned}$$

*[Translation by Stephen Houlgate, in his The Opening of Hegel's Logic, West Lafayette, Indiana: Purdue University Press, 2006, pp. 178-179.].

The vantage points, provided above, present, explicitly, terms arising from the various **&** rising degrees of “‘involution’” of the “‘arché’-category” -- of \mathcal{Q}_c in this example. By means of ‘non-amalgamative sum-mation’, they combine the mounting-degree ‘self-involution’ terms, wherein the cardinal count of occurrences of the ‘c’ subscript is of the form 2^n -- $2^1 = 2$, $2^2 = 4$, $2^3 = 8$ [the terms ‘ \mathcal{Q}_{M_c} ’, ‘ \mathcal{Q}_{K_c} ’, and ‘ \mathcal{Q}_{KK_c} ’, respectively] -- with all consecutive, inter[op]posed, intervening mutual ‘inter-volutions’, whose subscripts are combinations of **2** or more subscripts that include the ‘arché’-category’, i.e., via subscript, ‘c’, itself, and/or via subscripts that arise later, as solutions [‘ $\vdash \equiv$ ’] to the meanings of various degrees of the ‘self-involution’ of that self-same “‘arché’-category’ subscript, ‘c’, itself [the terms ‘ \mathcal{Q}_{MC} ’, ‘ \mathcal{Q}_{KC} ’, ‘ \mathcal{Q}_{KM} ’, and ‘ \mathcal{Q}_{KMC} ’, respectively].

‘Explicitization’ of Some Key Component Procedures Implicit in Hegel’s Methodological “‘Algorithm’”.

Several key cognitive procedures crucial to the implementation of ‘Hegel’s “‘Algorithm’” for Dialectic’, but that are only implicit in Hegel’s statements quoted **&** analyzed above, remain to be made explicit here. They are --

- **(1)** ‘arché’-category’ discovery/selection;
- **(2)** continuation of a systematic-dialectical categorial progression beyond its first triad of categories, when the immanent ‘intra-multiality’ of its ‘arché’-category’ exceeds that triadic exposition;
- **(3)** the discovery of, and the nature of, the final category in a systematic-dialectical categorial progression -- plus the **4**th key cognitive procedure, in **2** parts --
- **(4.a.)** appropriation of the [‘trans-Hegelian’] possibility of the “predictive”, or ‘pre-constructive’ overspill of the later/final categor(y)(ies) of a dialectical categorial progression, into a possible/expected future, beyond the present, ‘synchronic cross-section’ that is the focus of such a systematic-dialectical method of presentation, and;
- **(4.b.)** appropriation of the [‘trans-Hegelian’] possibility of a “retroductive”, or “‘re-constructive’”, overspill of the ‘implicitudes’ of the ‘arché’-category’ of a dialectical categorial progression, into [some of] the possible antecedents, coming before the present, ‘synchronic cross-section’ that is the focus of such a systematic-dialectical method of presentation.

• Definition, and Selection, of an ‘Arché’ Category for a Dialectical Categorial Progression ‘Presentation Meta-Model’.

The beginning of a “‘systematic-dialectical’”, or ‘synchronic-dialectical’, categorial-progression presentation, of/for a given Domain, or “‘[sub-]totality’” -- its beginning category, or first, ‘arché’-category’ -- should be “‘immediate’”, as Hegel states repeatedly.

For us, for general “‘systematic-dialectical’” categorial-progression presentations, this means that the ‘arché’-category’ should be the “‘seed’”, or “‘cell-form’” [cf. Marx], of/for that whole Domain.

The ‘arché’-category’ should be, as Hegel also repeatedly states, “simple”.

For us, this means that the ‘arché’-category’ should be the simplest category of its Domain. I.e., the ‘arché’-category’ should be the “‘determination’” that remains after all more complex determinations of the Domain have been abstracted away. And the ‘arché’-category’ should be the category of its Domain for which, for the level of discourse chosen for the given categorial-progression presentation, there are no antecedent categories [cf. the axioms of the first-order axiomatization of the “Natural” numbers -- the first-order “Peano-Dedekind Postulates”, Postulate ‘P4’*].

There may presently exist, or there may have existed, (a) categor(y)(ies) that belong *prior to* such an ‘arché’-category’, historically, chronologically, or systematically/logically. But there should be no such category that belongs, in priority, *before* the ‘arché’-category’ in *its* Domain. The ‘arché’-category’ chosen for a dialectical categorial-progression, comprehending a given Domain, should be “‘simple’” too in the sense that it explicitly “‘contains’”/involves none of the other intuitively/experientially/“chaotically”-given categories inhering in that Domain, but also in the sense that it implicitly “‘contains’”, or presupposes, all of them, and in the sense that it is also explicitly “‘contained’”/involved in each of them.

*[See: [http://www.dialectics.org/dialectics/Vignettes_files/Aoristos_Dvosphainthos_v4.0.F.E.D_Vignette_%2321.On the Opposition between the 'First Standard Arithmetic' and the Seldonian 'First Dialectical Arithmetic'_09FEB2014.pdf](http://www.dialectics.org/dialectics/Vignettes_files/Aoristos_Dvosphainthos_v4.0.F.E.D_Vignette_%2321.On%20the%20Opposition%20between%20the%20First%20Standard%20Arithmetic%20and%20the%20Seldonian%20First%20Dialectical%20Arithmetic_09FEB2014.pdf), p. #21-12].

- Continuation of a Domain's *Categorical Progression* 'Presentation Meta-Model', Beyond an *Initial Triad* of Categories.

The *first* example that we pursued, both in *Part I.*, &, already, earlier, here too, in *Part II.*, that of Marx's "'systematic-dialectical'" presentation of the *Domain* of the 'Capitals-System', does *not* stop at its *3rd* category, or with a *triadic* categorial progression, i.e., with a *3*-'category-symbol' *non*-amalgamative sum --

$$\underset{3}{\underset{1}{H}} = \underset{C}{\mathcal{H}}^{3^1} \vdash \equiv (\underset{C}{\mathcal{H}} \oplus \underset{M}{\mathcal{H}} \oplus \underset{MC}{\mathcal{H}})$$

-- but, per *our* solution, "rolls onward", to a total of *eight non*-amalgamatively-summed 'category-symbols' --

$$\underset{2}{\underset{3}{H}} = \underset{C}{\mathcal{H}}^{2^3} \vdash \equiv (\underset{C}{\mathcal{H}} \oplus \underset{M}{\mathcal{H}} \oplus \underset{MC}{\mathcal{H}} \oplus \underset{K}{\mathcal{H}} \oplus \underset{KC}{\mathcal{H}} \oplus \underset{KM}{\mathcal{H}} \oplus \underset{KMC}{\mathcal{H}} \oplus \underset{KK}{\mathcal{H}})$$

Likewise, the *second* example of *Part I.*, that of a *synchronic* *Biological* excerpt from *our* historical-dialectical, 'Dialectic of Nature', 'Dialectical "Theory of Everything" Meta-Model', does *not* stop at its *3rd* category, with a *triadic* progression of categories, with a *three*-'category-symbol' *non*-amalgamative sum, for *Domain D = B* --

$$\underset{V,3}{\underset{1}{H}}^B = \underset{V,p_B}{\mathcal{H}}^{3^1} \vdash \equiv (\underset{V,p_B}{\mathcal{H}} \oplus \underset{V,e}{\mathcal{H}} \oplus \underset{V,ep}{\mathcal{H}})$$

Instead, per *our* solution, it too requires a total of [at least] *8 non*-amalgamatively-summed 'category-symbols' --

$$\underset{V,2}{\underset{3}{H}}^B = \underset{V,p_B}{\mathcal{H}}^{2^3} \vdash \equiv (\underset{V,p_B}{\mathcal{H}} \oplus \underset{V,e}{\mathcal{H}} \oplus \underset{V,ep}{\mathcal{H}} \oplus \underset{V,b}{\mathcal{H}} \oplus \underset{V,bp}{\mathcal{H}} \oplus \underset{V,be}{\mathcal{H}} \oplus \underset{V,bep}{\mathcal{H}} \oplus \underset{V,l}{\mathcal{H}})$$

The *third* example of *Part I.*, that of the *synchronic*, "'systematic-dialectic'" of Hegel's «*Logik*» itself, *was* presented by *us* only up to a *triadic* progression of categories; only up to a *3*-'category-symbol' *non*-amalgamative sum --

$$\underset{3}{\underset{1}{H}}^d = \underset{B_d}{\mathcal{H}}^{3^1} \vdash \equiv (\underset{B_d}{\mathcal{H}} \oplus \underset{N}{\mathcal{H}} \oplus \underset{NB}{\mathcal{H}})$$

However, that *3*-'category-symbol' *non*-amalgamative sum is embedded in a work that evokes far more than *three* "carried along" categories, categories which thus, eventually, become also "antecedent" categories.

True, *some* of these many additional categories, or "determinations", appear to be arranged by Hegel in the manner of a 'scaled self-similarity regress', of triads "'containing'" triads. E.g., the 'Being + Nothing + Becoming' dialectic triad is contained in the "Being" chapter, *Chapter I.* of the *3*-chapter 'Being + Determinate Being + Being-for-Self' dialectic triad, contained in the "Determinateness" or "Quality" section, "Section One" of the three-Section 'Quality + Quantity + Measure' triadic dialectic, which, in turn, is "'contained'" in the *1st* "book", "BOOK ONE", "DOCTRINE OF BEING" triadic dialectic of the *3*-"BOOK"/"VOLUME" 'DOCTRINE OF BEING + DOCTRINE OF ESSENCE + DOCTRINE OF THE CONCEPT' triadic dialectic of Hegel's «*Logik*» *overall* -- *all* of which is, in turn, "'contained'", that is, is presupposed, in Hegel's *overarching* "'«*Logik*» ⊕ «*Natur*» ⊕ «*Geist*»" triadic dialectic, the dialectic of Hegel's system *as a whole*.

But even Hegel's «*Logik*» is *not* strictly *triadic*. For example, *Chapter 2*, on "The Judgement", in the volume of Hegel's «*Logik*» addressing the "DOCTRINE OF THE CONCEPT", features *four* subdivisions, & his next chapter, *Chapter 3*, on "The Syllogism", features, again, *four* subdivisions. Moreover, elsewhere in his writings on his dialectical «*Logik*», Hegel explicitly addresses and endorses *four*-fold, '*tetradic*' [or '*double-dyadic*'] dialectical categorial progressions.*

Marx's systematic dialectic of the circulation value-forms of capitalism suggests how some '*synchronic*-dialectical' categorial progression presentations may need to continue beyond '*triadicity*', & beyond '*tetradicity*' as well. We have described, as 'immanent *du*ality', or as 'intra-*du*ality', the 'internal [self-]contrariety' within typical '«*arché*»-categories'. But the *actual* typical case is one of an 'intra-*multi*ality', one of a *multi*plicity of greater than *two*. A "'systematic-dialectical'", '*synchronic*-dialectical' categorial progression presentation of a *Domain* should stop only once it has evoked enough solved-for categories to exhaustively '*explicitize*' that entire *implicit multi*plicity of 'contrarieties'.

*[See Hegel, *The Encyclopedia Logic: Part I of the Encyclopedia of Philosophical Sciences*, New York: Hackett Publishing Company, Inc., 1991, p. 298].

- The *Nature* of the *Conclusion* of a Domain-specific, Domain-interpreted Categorical Progression 'Presentation Meta-Model'.

The *last* category -- the *concluding* category -- of a “‘systematic-dialectical’” categorial progression theory/-presentation of a Domain, should be the one which represents the presenter’s solution for the *last* “‘algebraic’” ‘category-symbol’, “‘algorithmically’”-generated, for which the presenter can find a solution.

But this is so *only* if that ‘category-solution’ still locates the meaning of that *last*-solvable ‘category-symbol’ as residing “inside” -- as belonging to, as inhering in -- that Domain.

If that *last* ‘category-solution’, per that presenter’s definition of the Domain being presented/theorized, falls outside of that Domain, then the immediate predecessor [solved] category of that *last* ‘category-solution’ becomes the *concluding* category.

Alternatively, the presenter may decide to revise the definition of the Domain being presented, so as to include the increment of ontology introduced by and as that *last* ‘category-solution’, in the ‘revisedly-defined’ Domain.


Sometimes, as with the *eighth* term, \mathfrak{Q}_{KK} , of our categorial progression exposition of the ‘circulations-process’ formations of the ‘Capitals-System’ Domain, the *final* presenter-solvable ‘category-symbol’ will straddle the [historical and/or systematic] boundary between the target Domain and a/its successor Domain.

The general rubric that we use for ‘*trans-triadic*’ dialectical categorial progressions can be viewed via the following URL --

http://www.dialectics.org/dialectics/Applications_files/Revised.Application_Page_Posting_The_Seldonian_Psychohistorical-Dialectical_Equations_by_Aoristos_Dyosphainthos,20SEP2014.pdf

-- 12th image from “‘top’”.

- The Trans-Hegelian Possibility of 'Synchronic Overspill': 'Retroductive Re-Construction' & Predictive 'Pre-Construction'.
- (4.a.) appropriation of the ['trans-Hegelian'] possibility of the "predictive", or 'pre-constructive' overspill of the later/final categor(y)(ies) of a dialectical categorial 'present-ation', into a possible/expected future, beyond the present, 'synchronic cross-section' that is the focus of such a systematic-dialectical method of presentation.

Aiming to continue a dialectical presentation categorial expansion, as described in the last sub-section, for only as far as the new, "'algebraic"' 'category-symbols' generated by the extended "'algorithm"' are interpretable/solvable for the Domain being presented, may occasion a surprise. A final so-generated 'category-symbol' may, indeed, be solvable by the presenter, but not for the Domain, or may be interpretable/solvable as a category that does not belong wholly within that Domain, but only partially within it, as with our final Domain D = «K.» 'category-symbol', .

In the context of "'historical"'', or 'diachronic', dialectics, as well as in the context of "'systematic"'', or 'synchronic', dialectics', the application of this dialectical method -- the continued iteration of the extended 'dialectic algorithm' -- may eventually generate "'algebraic"' 'category-symbols' which suggest presently unassignable categories -- representing presently nonexistent, or only 'fractionally-existent', incremental ontology. However, that incremental ontology, may, nonetheless, be recognizable, to the presenter, as potentially representing expected, anticipated future ontology. This phenomenon may thus constitute a "prevision", a 'pre-construction, a 'categorial prediction', or 'ontological forecast', of new, successor, unprecedented categories/categorial-ontological content that is yet to come.

We call this phenomenon 'synchronic overspill' of 'the future-leaning kind'.

The categorial contents of one non-zero duration 'synchronic cross-section', or 'synchronic slice', of history that includes 'present history', and that is inhabited by the «arché»-ontology of a given Domain only -- is necessarily a "'slice"' of history that is at least somewhat 'temporally thick', even if that 'time-thickness' is measured in only a few nano-seconds. It will share a boundary with another, next, 'presently-future' such "'slice"''. Eventually, as the dialectical categorial progression presentation of that Domain's native ontology extends to and through these formerly future "'slices"'', that contain ontology inhering in the successor categories of the «arché»-category for that 'Domain-ontology', that Domain's ontological progression will reach its end. The next later "'slice"' of history will manifest an 'ontological singularity', the 'ontologically-revolutionary' -- or "[ontologically] meta-evolutionary"' -- irruption of 'next-Domain ontology'; of 'new-Domain ontology' -- for which we need a new «arché»-category'.


After all, 'synchronic, systematic dialectic' is not absolutely synchronic -- is not absolutely non-diachronic. Historicity, temporality, is all-pervading, and all-encompassing. A "'systematic dialectic"'', a 'synchronic dialectic', is merely a 'micro-historical dialectic'. It addresses a finite, non-zero duration that is only 'relatively synchronic' -- relative to the typically far longer durations of history addressed by "'historical dialectic"'', or 'diachronic dialectic'. Presentations too take time. Thus, in truth, all dialectic is diachronic.

And the future content of our cosmos arises, and becomes present, by (the) combination(s) of the present/past «monadic» content(s) of our cosmos: by (their)(its) 'allo-combinations', but also by (their)(its) 'auto-combinations'. How else could it arise?

The detection of «monads», or units, inhering in, and constituting, a new, unprecedented, originating «arché»-category', for a new, unprecedented 'ideo-ontological' Domain, or for a new, unprecedented 'ideo-physio-ontological' Domain, inductively induces, in those of dialectical mind, an expectation of the [later] detection of units of its 'contra-category', partial ['mero-contra-categories'], &/or full. Likewise, detection of units of its 'contra-categor(y)(ies)' induces a dialectical expectation of [later] detection of units of their 'uni-category', partial ['mero-uni-categories'], &/or full.

Therefore, such 'synchronic overspill' is rather to be expected.

- (4.b.) appropriation of the ['trans-Hegelian'] possibility of a "retroductive", or 're-constructive', overspill of the 'implicitudes' of the «arché»-category' of a dialectical categorial progression, into [some of] the possible antecedents, coming before the present, 'synchronic cross-section' that is the focus of such a systematic-dialectical method of presentation.

The given «arché»-category' may, quite properly, represent the first category for the given Domain. But it may yet also 'back-implicate', "'retrodict"'', "'retroduce"' to, or suggest a 'reconstruction' of, (a) prior, predecessor categor(y)(ies), which inhere(s) in a systematically and/or chronologically prior Domain. A case in point is that of our Part I. example of the [Terran, +?] Biology Domain. There the «arché»-category' symbol, , representing the category of 'pre-eukaryotic living cells', calls to

mind prior ontological categories. While typically ruled-out as categories belonging to the Biology Domain, these prior categories nevertheless belong as ontological categories in a broader 'dialectic of nature', e.g., the 'cosmo-ontological' categories for molecules, atoms, 'meta-quanta', 'mere quanta', "Dark Matter", and "Dark Energy".

Assessment of the Scientific Scope and Limitations of Hegel's “Algorithm” for *Dialectic*.

It is overwhelmingly likely, we hold, that *neither* Hegel *nor* Marx -- when Hegel wrote the «*Logik*», or when Marx wrote «*Das Kapital*», respectively -- had in mind anything even remotely resembling the detailed, exacting, axiomatized ‘*categorical calculus for dialectic*’ that we have used, herein, to model, and to analyze, key portions of the [tables of] contents of their works.

Therefore, even the degree of “‘fitness’” that we have found, above, to Hegel’s general descriptions of [his] *dialectic*, and to the [tables of] content of both works, is quite remarkable.

However, the ‘remarkability’ of this “‘fitness’” is reduced, somewhat, in *our* eyes, because *we* believe that both Hegel and Marx had, at work in the designs of these works, certain intuitive, informal notions of what might aptly be called ‘categorical combinatorics’.

Moreover, there are *features* of Hegel’s version of *dialectic*, in particular, that we do *not* wish *our* algorithms to emulate.

Specifically, Hegel’s *dialectical* categories typically exhibit “‘*subject/object inversion*’”.

This has been noted of Hegel’s work since Feuerbach at least. This trait later rose to compose the core of Marx’s critique of ‘*the modern ideology*’ entire. This trait is a central ‘psychohistorical symptom’ of ‘*ideology-formation(s)*’ in *the whole epoch* of *human self-alienation*; of our tendency to [collectively] project *our human agency*, *our ‘subject-ivity’*, *our ‘subject-hood’*, our ‘*subject-ness*’, onto [fetish-]objects -- onto ‘*ideo-objects*’ and ‘*physio-objects*’ alike -- objects that we have in fact used our [collective] ‘*agent-al*’, ‘*subject-ive*’ creative power to create, but *as if behind our own backs*.

We wish *our dialectical* categories to be so formulated as to express *actual agency* -- the *active, causal agency* of the «*monads*» that those *dialectical* categories represent -- whether those *agents* be ‘*pre-human*’, and only ‘*proto-subject-ive*’, «*monads*», such as ‘*quantae*’, ‘*meta-quantae*’, ‘*atomiae*’, ‘*moleculariae*’, ‘*prokaryotiae*’, ‘*eukaryotiae*’, ‘*meta-karyotiae*’, [e.g., animal] ‘*socialiae*’, or ‘*humaniae*’; *human subjects / agents full-blown*.

Moreover, for Hegel, the ultimate, *final* category of the ‘*dialectic-methodic*’ categorial progression of his system is the same as its *initial*, ‘«*arché*»-category’. Hegel’s *overall* categorial progression “‘returns into itself’”. The ‘«*arché*»-category’ “‘premise’” is, in a sense, “‘proven’”, or “‘grounded’”, by all of the categorial progression that follows it, and that returns into it.

This “‘quasi-*statical*’”, ‘quasi-*eternalistic*’ *circularity* vitiates the potential, truly historic “‘progressivity’” of Hegel’s *dialectic*.

The ‘*pre-constructive, pre-dictive potential*’ of *dialectic*, that we addressed above, is *completely squandered* by this **2-D**, “‘flatland’” *circularity* of Hegel’s account of *dialectic*, as opposed to that open-ended, higher-**D** ‘*helicity*’ that he, immanently, within his own system, already had grounds for embracing.

About the Author.

Hermes de Nemores is a founding member of the **Foundation Encyclopedia Dialectica [F.E.D.]** research community, and a voting member of the **F.E.D.** General Council. He also serves as the General Council's General Secretary, having been continually re-elected to that role by the **Foundation** membership, ever since the General Council's founding term.

He has contributed signally to the development, and to the world-wide dissemination, of the fundamental findings of the **F.E.D.** research enterprise.

The author expresses his gratitude to the **F.E.D.** research collective, and to the **F.E.D.** community at large, for their critical feedback regarding this text. That critical feedback has driven the many rounds of revisions to this text, and of its new published versions, with key improvements in every round.

The author wishes, hereby, also to express his gratitude to the **E.D.** Editors, of the **F.E.D.** Special Council for the **Encyclopedia** -- for **Encyclopedia Dialectica [E.D.]** -- in response to their **E.D.** standardization of this text, as well as for other improvements that they have contributed to it.

Remaining imperfections remain the responsibility of the author.