

Dialectic is the Organizing Principle of the «Kosmos», of Nature as Totality

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Author's Preface. The purpose of Vignette #7 is to present a progression of assertions of increasing specificity as to the **universality** of «*aufheben*» **dialectic**, as the very **nature** of “*Nature*”.

A Note about the On-Line Availability of Definitions of F.E.D. Technical Terms. Definitions of **Encyclopedia Dialectica** technical terms and ‘neologia’ are available on-line via the following URLs --

<http://www.dialectics.org/dialectics/Glossary.html>

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/ClarificationsArchive.htm>

-- by clicking on the links associated with each such term, listed, alphabetically, on the web-pages linked above.

The **Encyclopedia Dialectica** special terms most fundamental to this vignette are listed below, together with links to their **E.D.** definitions --

«*aufheben*»

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Aufheben/Aufheben.htm>

http://www.dialectics.org/dialectics/Glossary_files/F.E.D.,%20A%20Dialectical%20%27%27Theory%20of%20Everything%27%27,%20Volume%200.,%20FOUNDATIONS,%20Edition%201.00,%20first%20published%2010DEC2011,%20Definition,%20AUFHEBEN,%2018AUG2011,%20JPEG.jpg

qualo-fractal

http://www.dialectics.org/dialectics/Glossary_files/F.E.D.,%20A%20Dialectical%20%27%27Theory%20of%20Everything%27%27,%20Volume%200.,%20FOUNDATIONS,%20Edition%201.00,%20last%20updated%2024AUG2011,%20Definition,%20%27QUALO-FRACTALITY%27,%20JPEG,%20for%2025AUG2011.jpg

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/QualoFractal/QualoFractal.htm>

meta-monadization

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/MetaMonadization/MetaMonadization.htm>

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Meta/Meta.htm>

http://www.dialectics.org/dialectics/Glossary_files/F.E.D.,%20A%20Dialectical%20%27%27Theory%20of%20Everything%27%27,%20Volume%200.,%20FOUNDATIONS,%20Edition%201.00,%20first%20published%2010DEC2011,%20last%20updated%2017AUG2011,%20Definition,%20ARCHE%27,%20JPEG_2.jpg

http://www.dialectics.org/dialectics/Glossary_files/F.E.D.,%20A%20Dialectical%20%27%27Theory%20of%20Everything%27%27,%20Volume%200.,%20FOUNDATIONS,%20Edition%201.00,%20first%20published%2010DEC2011,%20last%20updated%2020AUG2011,%20Definition,%20%27META-%27,%20for%2022AUG2011.jpg

-- definitions resources which will be expanded as the **F.E.D. Encyclopedia** Project unfolds.

A Progression of Assertions Regarding the “«Aufheben» Dialecticality” of our «Kosmos»:

1. The organizing principle of our cosmos is dialectic.
2. The organizing principle of our cosmos is «aufheben» dialectic.
3. The organizing principle of our physical cosmos is [self-]«aufheben» dialectic.
4. The organizing principle of our physical cosmos is [self-]«aufheben» dialectic, *synchronically* and *diachronically*.
5. The organizing principle of our physical cosmos is [self-]«aufheben» dialectic, in the concrete, physical, material form of [self-]‘*meta-individualization*’*, or of [self-]‘*meta-monadization*’*, both *synchronically* [as in “‘*systematic dialectics*’”] and *diachronically* [as in “‘*historical dialectics*’”].
6. The organizing principle of our physical cosmos is [self-]«aufheben» dialectic, in the concrete, physical, material form of ‘*meta-fractal*’** [self-]‘*meta-monadization*’*, both *synchronically* [as in “‘*systematic dialectics*’”***, as well as in the presentational mode of ‘*meta-systematic dialectics*’***, for almost purely human-‘ideic’/-‘psycheic’ systems-progressions, e.g., axioms-systems progressions] and *diachronically* [as in “‘*historical dialectics*’”***, as well as in the *historical* mode of ‘*meta-systematic dialectics*’***, for almost purely physical, or at least partly physical, systems, in terms of their systems-progressions, e.g., pre-human-natural “systems”, and in ‘*psychohistorical dialectics*’***, for mixed, physical/‘psycheic’-systems progressions, e.g., for historical progressions of human-social systems].
7. [Self-]«Aufheben» dialectic, in both its *earlier, pre-human* “*physical*” forms, and in its *later, human*, “‘*psychophysical*’” forms, names the general [self-]«aufheben» movement of [self-]‘*meta-monadization*’*, that *diachronically constitutes* [as the ‘*meta-dynamic*’ of the transitions from the *dynamics* of each *earlier, predecessor universal ontology*, to the *dynamics* of each consecutively *later, successor, self-expanded universal ontology*] the *synchronically* viewed, present ‘content-structure’ of the *cosmological-dialectical* ‘*meta-fractal*’**, including of the *synchronic* views of the developing *sub-universes* of that *total universe*, and including the technological creations of human nature.
8. “‘[Self-]«Aufheben» dialectic’” names the *diachronic* organizing ‘meta-dynamic’, and the *synchronic* organizing architectonic principle, of our *total cosmos*; “*Nature*”; the “‘*Totality*’”.

*[self-]‘*meta-monadization*’, [self-]‘*meta-individualization*’, [self-]‘*meta-holonization*’, or [self-]‘*meta-unitization*’, is the universal, concrete form of the essential *dialectical* [self-]«aufheben» process. It is the movement of the inextricably unified, unitary qualitative *self-transformation, self-elevation* [in ‘*meta-fractal*’ scale], and *self-preservation* [as the conserved ‘internity’, or inner content, of the new “‘scale’” or “‘level’” thereby created], whereby a “population” of “individual *units*”, all of a given kind, creates out of itself a ‘meta-population’, that is, a [meta-]population consisting of a new kind of individual *units*, which are ‘meta-*units*’ to that predecessor population’s *units*, in that each successor -- ‘meta-’ -- *unit* is made up out of a heterogeneous multiplicity of its predecessor *units*, the *units* of its predecessor population.

These *units*, and their ‘meta-*units*’, are herein grasped, not as inert, atomistic, separately self-subsistent, self-enclosed and statical “point particles”, but, on the contrary, as ‘subject/verb/object-identical’ ‘event-entities’, or “‘eventities’” -- agents of change, self-agents of self-change, agents of further [self-]«aufheben» dialectic, i.e., agents of both the ‘*auto-«aufheben»*’ & the ‘*allo-«aufheben»*’ kinds of dialectic.

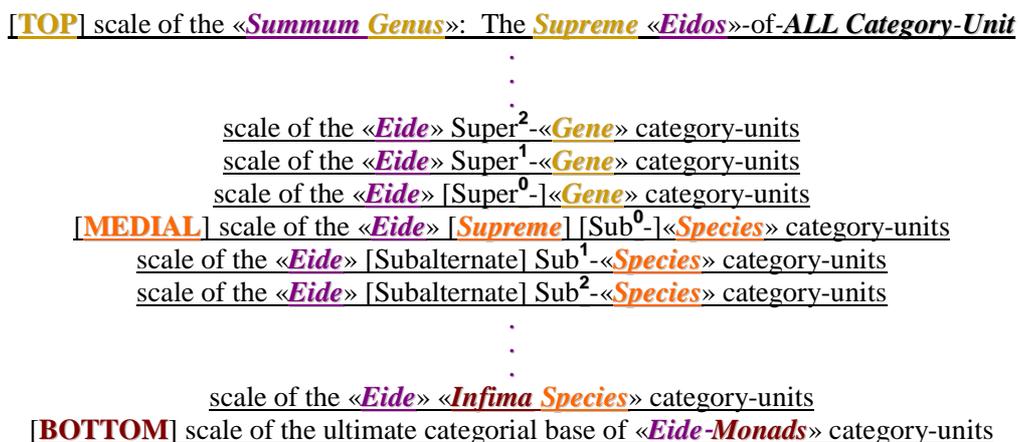
Such agents are ‘proto-subjects’ -- are ‘verbs incarnate’ -- as well as being *objects* of “‘**self-change**’”, due to *their own* action within/upon themselves/one-another, and due to the actions upon them of *other* agents, other ‘[proto-]subject eventities’. Such agents are also agents of “‘**other-change**’”, via the “‘*object*’” aspect of *other* agents, through the formers agents’ actions upon the latter.

The earliest so far inferred cosmological instance of diachronic, temporal ‘self-meta-**unit**-ization’ is the self-induced combination of the sub-**n**uclear/pre-**n**uclear “‘eventities’” named “quarks” and “gluons” [and “leptons”, including “electrons”] to form the pre-atomic/nuclear **s**ub-atomic “‘eventities’” named “mesons” and “protons” [and “neutrons”].

a ‘meta-fractal**’ is a **finitary**, **qualitative** fractal, or ‘**ontological** [kinds-of-being-scaled] **fractal**’ -- a ‘**qualo**-[**quanto**-] fractal for short. That is, it is a scaled “self-similarity” regress, with a **finite** number of “scales” or “levels”, and with scales that are **qualitatively** mutually similar, not [just] **quantitatively** mutually similar, and with a finite regress of scales that constitutes a qualitative, ontological **progression**, not an ontologically-gainless succession of scales; not a mere, gradient-less sequence of scales. A ‘meta-fractal’ is a ‘[**quanto**-]**qualitative** scales **regress**’ that is also a ‘scales **progress**’.

‘**Meta-fractals**’ can be viewed as either **synchronic**, all-at-once-*present* scaled-similarity-regress ‘content-structures’, with “size”, and/or nested content, as their scaling principles, or as **diachronic**, temporal-historical scaled-similarity-regress ‘content-structures’, with **temporal acceleration**, and/or “size”, and/or nested content, as their scaling principles, or they can be viewed as both -- as **diachronico-synchronic scaled-similarity-regresses/progresses**.

The earliest known human, self-conscious formulation of a ‘**meta-fractal content-structure**’ [though not, of course, under that name] -- the ancient, classical example of a synchronic [and, originally, supposedly eternal, immutable] ‘**meta-fractal**’ -- is the **ontological-categorial** ‘content-structure’ of Plato’s attempted universal ‘ideo-taxonomy’, his «**Arithmos Eidetikos**» [translation: **Assemblages of «Ideas»-Units**, or of **Ontological Category-Units**], i.e., Plato’s original **dialectic**, whose visionary finite regress of mutually-similar scales -- of “‘«**Ideas**»-levels’”, or of ‘«**Eide**»-scales’ [“‘**ontological-categorial** levels’”] -- can be depicted as follows, as an elaboration of the upper, “knowledge” [«**epistémé**»] portion of Plato’s “**Divided Line**” [*The Republic*, **511b-c**] --



-- as adumbrated, for example, in Plato’s dialogue *The Sophist* [**253b-254d**].

Note the **synchronic** -- and also the **diachronic**, if one is to mentally survey the «Eide», e.g., in a systematic order of succession -- «**aufheben**»-relations within this example. The «Eide» «**Infima Species**» **implicitly «aufheben»-contains** -- **negates** the **specificity** of, **elevates** the level of **generality** of, and implicitly still **conserves/contains** the **specificity** of -- the ultimate, **most specific categorial units**, the «Eide-**Monads**». The “lowest”, **most specific «Eide» Subalternate «Species»** **implicitly «aufheben»-contains** the «Eide» «**Infima Species**». ... The «Eide» **Supreme «Species»** **implicitly «aufheben»-contains** the “highest”, **least specific «Eide» Subalternate «Species**». The “lowest”, **most specific «Eide» «Genos»** **implicitly «aufheben»-contains** the «Eide» **Supreme «Species»** category-units. ... The «**Summum Genus**» or **Supreme «Eidos»** **implicitly «aufheben»-contains** the “highest”, **least specific «Eide» Super-«Genos»** category-units.

***For definitions of the four kinds [e.g., «*species*»] of *dialectics* per the **F.E.D.** ‘*Dialectic of the Dialectic Itself*’, see --

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/SystematicDialectics/SystematicDialectics.htm>

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/HistoricalDialectics/HistoricalDialectics.htm>

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/MetaSystematicDialectics/MetaSystematicDialectics.htm>

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/PsychohistoricalDialectics/PsychohistoricalDialectics.htm>

Two Modern Examples of ‘*Diachronico-Synchronic Meta-Fractals*’, or of ‘*Spatio-Temporal Meta-Fractals*’:

Our two modern examples of a ‘diachronico-synchronic meta-fractal’, i.e., of a ‘spatio-temporal meta-fractal’, are both views of our cosmos at large -- i.e., of what, through our sciences, we have come to know about our cosmos so far.

The ‘*Cosmological Meta-Fractal*’, Example A. The first of our ‘cosmological meta-fractal’ examples is the simpler of the two, and pertains to a more exclusively **macroscopic**, **macrocosmic**, and mainly **synchronic** ‘meta-fractal’ view of the whole universe, and is one that principally involves the ‘gravitic’ ordering principle of our “‘*macrocosmos*’”, and that involves the scales of the **orb**-masses which **orbit** other, larger **orb**-masses [or which **orbit** their common centers of gravity with such larger **orb**-masses].

This ‘meta-fractal’ view begins, at its highest, top scale within our macrocosm, with single **stars**, **planet-less multi-star systems**, and **stellar/planetary systems**, orbiting their common centers of gravity with galactic core “**black holes**” within galaxies.

Its next scale “down” might be that of smaller **stars** &/or of **planets**, orbiting common centers of gravity with larger **stars**.

Its next scale down might be that of **moons** orbiting their common centers of gravity with **planets**.

Despite the fact that the scaling of this ‘meta-fractal’ involves mass [“**quantity of matter**”], this ‘*much-of-our-macrocosmos-encompassing*’ ‘content-structure’ is a **qualo**-fractal, not just a [finite] **quanto**-fractal, because galactic-core “**black holes**”, intra-galactic **stars**, and **planets**, are **qual**itatively different **kinds** of objects, or of **units**, with different overall evolutionary and ‘meta-evolutionary’ dynamics and ‘meta-dynamics’, even though their differences can be ‘**quanto-qual**itatively’ **measured**, & described, in some small part, by **counting qual**itative **metrical units** of their “masses”, e.g., by **counting** “grams” [**gms.**] **qual**itative **units**, & by comparing **gm. qual**itative **metrical units**-expressed amounts, **quantified** by **Real** numbers **quantifiers** -- a different **quantifiers**[-range], but the same **metrical unit-qual**ifier, **gms.**, for each **kind** of body.

Of course, viewed diachronically, present data and inference, reconstructing the macrocosmic [meta-]evolution of our cosmos, indicates that, *generally*, the first **galaxies** -- or, at least, the first “**proto-galaxies**” -- arose before the first intra-galactic **stars**, the first intra-galactic **stars** before the first **planets**, and the first **planets** before the first **moons-of-planets**.

The “top” scale, in the case of this ‘meta-fractal’, is the «**arché**» scale [galaxy-core “**black holes**”]. The bottom scale [planetary **moons**], is **not** the «**arché**» scale, the starting scale, in the *special* case of this ‘macro-cosmo-meta-fractal’.

Note the **synchronic** -- and **diachronic** -- «**aufheben**»-relations within this example: the «**arché**»-**galaxies**/“**black holes**” *eventually* evolve to contain the **proto-stars**, or, in some cases, the **proto-stellar/proto-planetary systems** -- i.e., the “atomic clouds”, or “molecular clouds” -- which also eventually evolve, in some cases, to contain the [**proto**-]**planets**, which eventually evolve, in some cases, to be orbited by/to include [their own “satellites”]; their own] **moons**.

■ That is, the galaxies may have come first -- or the “‘proto-galaxies’”, perhaps initially devoid of stars within them, or at least the “**holonium hearts**” [Sophya Dors St. Germain] of those “‘proto-galaxies’”, the “black holes” -- that eventually gathered together those “‘proto-galaxies’”. Such “**holonium hearts**” may have been the results of early ‘mega-stars’, and of their short-lived lives and ‘hyper-hyper-novae’ denouements. By “**holonium**” is meant the “substance” of “black holes”, the hypothesized ‘**meta-finite**’ kind of material, the actual **ontological increment** of a “new” kind of matter, born out of what some physicists phantasize as being an “infinite”-collapse singularity event, leaving an “infinitesimal” collapse-remnant, a zero-dimensional point-mass outcome, for [mega-]stellar fusion fuel-exhaustion induced stellar death implosion-contraction. The **F.E.D.** ‘*Principle of Metafinity*’ holds that no “actual infinities” [or “‘actual infinitesimals’”] can ever manifest in the physical universe empirically. Per that Principle, equational “‘infinite[simal] singularities’” must be artefacts of a Gödel-incomplete mathematics, and do not represent a valid scientific concept.

This Principle leads us to expect that the “gravitational singularities” in the equations used to represent, e.g., “hypernovae” phenomena of “total gravitational collapse”, inadequately represent a physical actuality that is **not** empirically “**infinite**”, but, on the contrary, that is ‘meta**finite**’. That is, we are led to the hypothesis that such phenomena of ‘collapse due to hyper-massive self-gravitation’ involve, not “infinitely small” point-“objects”, or “infinitely large” densities -- all manifesting, still, only the “same old” ontology that produced them -- but, instead, involve ‘physical revolutions in Nature’; the irruption of new, but familiarly **finite**, ‘physio-ontology’; of a **new kind** of “matter”, or of “mass-energy”, or of ‘energy-time/mass-space’; a kind qualitatively/ontologically different from that which gives it birth, and similar to, but also beyond, the **new kind** yielded by the “milder” ‘self-gravitational self-collapse’ that forms neutron stars: “**bulk neutronium**”. We refer to this hypothetical further **new kind** of “matter” by the name ‘**holonium**’.

The ‘Cosmological Meta-Fractal’, Example B. The second of our ‘cosmos-as-meta-fractal’ examples is by far the more replete of the two, and is not limited mainly to the macrocosm. Instead, it spans from the scale of the deepest microcosm presently known with much clarity -- that of the ‘gluonic’ and other “non-composite” bosons, and the ‘leptonic’ and ‘quarkic’ fermions -- all the way “up” in scale to the planetary-scale macrocosm, and beyond, although our account here will stop at the planetary scale.

This second modern-day example of a ‘**diachronico-synchronic meta-fractal**’, or ‘**spatio-temporal meta-fractal**’, is that of our modernly-known cosmos as a whole -- or of the whole of what our modern sciences have brought us to know about our cosmos to-date.

First, viewed mostly **synchronically** -- as a ‘**synchronic meta-fractal**’, or ‘**present-time spatial meta-fractal**’, our cosmos as a whole appears as follows --

Suppose that we -- **right here, right now** -- attend to an imagined, ‘temporally-thin’ synchronic “section”, or “slice”, of our **present** cosmos [e.g., within our local “light-cone”].

Inside of our **human**[s-led] [‘meta-]society’, we will find, **constituting** it, a past-to-present internalization -- still «**aufheben**»-contained within it -- of modified [mutually “domesticated”] forms of our predecessor, proto-**language**-based ‘anima**l** societies’ -- such as those of dogs, horses, cattle, pigs, chickens, cats, etc. -- and also **plant** populations, or single-**plant**-kind “communities” -- such as those of rice, wheat, corn, oats, barley, rye, etc. -- as well as that of a modified, partially ‘self-domesticated’ form of the anima**l** societies of our predatory, hunting/gathering/foraging/-scavenging “proto-**human**” ancestors.

Outside of our **human** society, but still on planet Earth, we will find that those internalized anima**l** societies and **plant** “communities” still also, by and large, persist, as “wild” anima**l** societies and as “wild” **plant** “communities”, as present-day “evolute” survivals, never yet incorporated into our **human**-social, ‘meta-social’ ‘internity’, but still carried forward in[to] the present [and, ‘expectedly’, on into the immediate future], **conserved** but ‘**un-elevated**’, i.e., still located within the proximate ‘biospheric’ part of our **human** society’s ‘externity’.

Scaling down deeper:

Inside each of those present anima**l** societies and **plant** “communities”, inside of our **human** society, and **constituting** each such anima**l** society and each **plant** “community”, we will find living ‘meta-**b**ions’ or ‘meta-**b**ions’ -- i.e., both “meta-zoan” and “meta-phytan” living **b**odies, ‘massively multi-[eukaryotic-]cellular’ organisms -- individual, living human **b**odies, dog **b**odies, horse **b**odies, rice plant **b**odies, wheat plant **b**odies, corn plant **b**odies, etc., still alive, as constituents of the ‘internity’ of **human** society.

Inside each of those present anima**l** societies and **plant** “communities”, **outside** of our **human** society, still on planet Earth, such ‘meta-**b**iotic’ **b**odies -- ‘meta-zoan’ and ‘meta-phytan’ “multicellular” emb**o**diments -- also presently live and continue to live, also in “wild” [**un-/less**-mutually-domesticated] forms, still within the planetary biosphere of Earth.

Scaling down deeper still:

Inside each of these present ‘meta-**b**ion-ic’ living “‘corpuses’”, those that have incorporated into the inside of our planetary, global **h**uman society, and **constituting** those **h**uman-society-internal ‘meta-**b**iotic’, ‘meta-cellular’ **b**odies, there presently live “‘live’” **e**ukaryotic cells, cells of a kind that also live inside, and **constitute**, the ‘meta-**b**iotic’, multicellular **b**odies that live **outside** of our society, and also **e**ukaryotic cells that persist as populations of “‘free-living’”, “‘merely-biotic’”, ‘pre-meta-**b**iotic’ individual **e**ukaryotic cells.

Scaling deeper:

Inside each of these **e**ukaryotic cells that have incorporated into, and that **constitute**, the ‘multi-[**e**ukaryotic-]cellular’ organisms that populate the inside of our planetary, global **h**uman society, reside modified forms of formerly free-living “‘**p**ro-karyotic” cells, or ‘pre-eukaryotic’ cells, with their own separate DNA still retained inside them, and functioning as the “organelles” inside the **e**ukaryotic cells which their union created, or **constituted**, e.g., chloroplasts and mitochondria.

Outside of our planetary, global **h**uman society, but still **inside** our planet’s biosphere, ‘pre-**e**ukaryotic cells’ also presently reside, e.g., as organelles, inside the **e**ukaryotic cells incorporated into the ‘meta-**b**iota’ out there, and also inside the “‘free-living” **e**ukaryotes out there. But **pre-e**ukaryotes also exist “out there”, as populations of “‘free-living single cells”, e.g., as populations of **bacteria** and of **archaea** within the Earth’s biosphere, e.g., on the continental land surfaces, and in the sea [and including also in large parts of the “interior lithosphere”], and never yet incorporated into any **e**ukaryotic-cellular **units**. Indeed, the aggregate biomass of such “‘free living”, “‘unincorporated”” **pre-e**ukaryotes appears to exceed that of all other kinds of “‘biota”” [of living, “biotic” **units**] on the surface of [and inside] the Earth.

Deeper still:

Inside each of these ‘pre-**e**ukaryotic cells’ that have incorporated into, and that **constitute**, the **e**ukaryotic cells that have incorporated into, and constituted, the ‘meta-**b**iota’ inside our planetary, global **h**uman society, are multitudinous **m**olecules.

Outside of our planetary, global **h**uman society, but still **inside** our planetary biosphere, such **m**olecules also reside, inside, and **constituting**, the “‘free-living” ‘pre-**e**ukaryotic cells’, and the ‘pre-**e**ukaryotic cells’ living inside, and **constituting**, the “‘free-living” **e**ukaryotic cells, and inside the **e**ukaryotic cells that have incorporated into, and **constituted**, the **a**social ‘meta-**b**iota’, and the **s**ocial ‘meta-biota’, the social [ized] animal**s** and the ‘communitized’ p**l**ants that have incorporated into, and **constituted**, the animal**s** societies and p**l**ant “‘communities”” that persist outside of human society, but also as **m**olecules unincorporated into -- ‘un-included in’ -- any higher/later-appearing/more-inclusive ‘meta-molecular’ ‘meta-**<monads>**’, but residing still within the biosphere of Earth. But such ‘unincorporated **m**olecules’ reside also outside of the Earth’s biosphere, both inside its “noosphere”, and in its core, and in its upper lithosphere, and in its upper atmosphere, and elsewhere in Earth’s ‘**non**-biosphere’, **and also beyond/outside of the Earth**.

The next scale down:

Inside each of these **m**olecules that have incorporated into the **p**ro-karyote-organelles within the **e**ukaryotes within the animal**s** societies/p**l**ant communities within our contemporary, planetary **h**uman [‘meta-’]society, are multitudinous “‘chemical elements”” -- “**a**toms” in the modern sense, **not** in the ancient sense -- **a**toms of Hydrogen, Carbon, Nitrogen, Oxygen, etc., etc.

Such **a**toms also presently reside ‘**out-side**’ of our **h**uman society, and still ‘**in-side**’ of the **m**olecules, ‘pre-**e**ukaryotic cells’, **e**ukaryotes, ‘meta-**b**iot**e**s’, and animal**s** societies/p**l**ant “‘communities”” that today reside outside of **h**uman society, and still inside of the planetary biosphere of planet Earth. Such **a**toms also presently reside ‘**out-side**’ of our planetary biosphere, both inside its ‘**non**-biosphere’, and also outside of our planet altogether: **beyond it entirely**.

...to the deepest scales presently well-known:

Inside each of these **a**atoms, both those **a**atoms that have incorporated into, and **constituted**, all of the higher/later-appearing/more-inclusive populations of ‘meta-atomic’ ‘meta-**«monads»**’, ‘meta-**units**’, or ‘meta-**individuals**’, inside our planetary, global **h**uman society, and also inside each of those **a**atoms that reside **outside** of our **h**uman society, either incorporated into higher ‘meta-**units**’ out there, or **un**incorporated into -- ‘**un**-included in’ -- any higher/later-appearing/more-inclusive ‘meta-atomic’ ‘meta-**«monads»**’, either within, or outside, the boundaries of the Earth, are ‘nuclear **s**ub-atomic’ **units** -- protons, neutrons, mesons, ... -- as well as those ‘exo-nucleus’, or ‘**non**-nuclear **s**ub-atomic’, and also ‘pre-atomic’, units, called electrons, which are also pre-**n**uclear, pre-Hadronic units which arose, sustainedly, prior to the first sustained ‘arisal’ of mesons, protons, and neutrons.

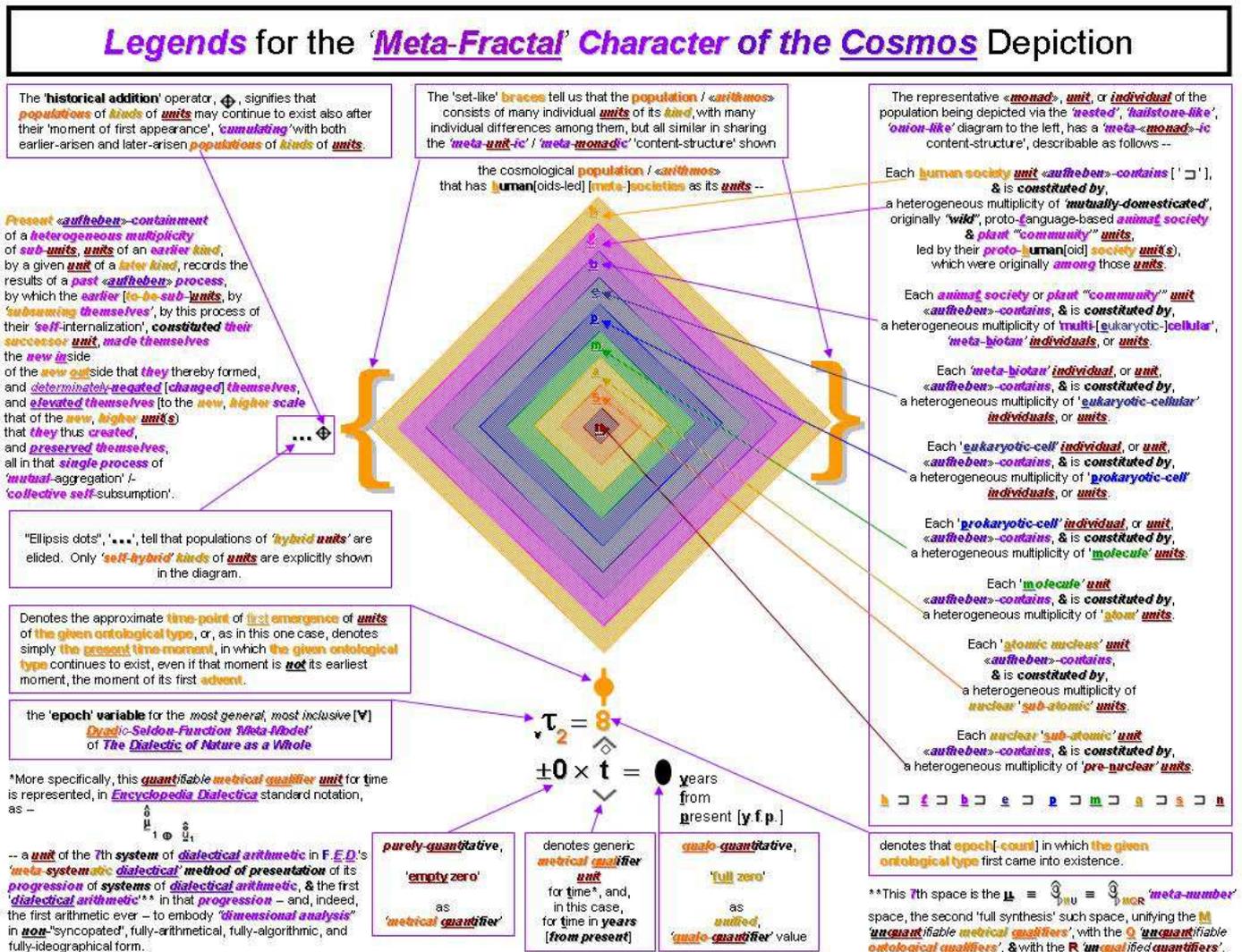
Some of these ‘pre-atomic’ and “**s**ub-atomic” **units** /**«monads»** -- e.g., mesons, protons, and neutrons -- incorporate, and are **constituted** by, ‘pre-nuclear’ and “sub-**n**uclear” **units** /**«monads»** -- e.g., gluons and quarks.

These gluon and quark **units** /**«monads»** incorporated into -- and ultimately, ‘**«arché»**-ically’ **constituted**, and **are still inside** -- **all** later/higher/more-inclusive things, **all** later-irrupting ‘meta-**unit**’/‘meta-**«monad»**’ ‘cosmo-ontology’.

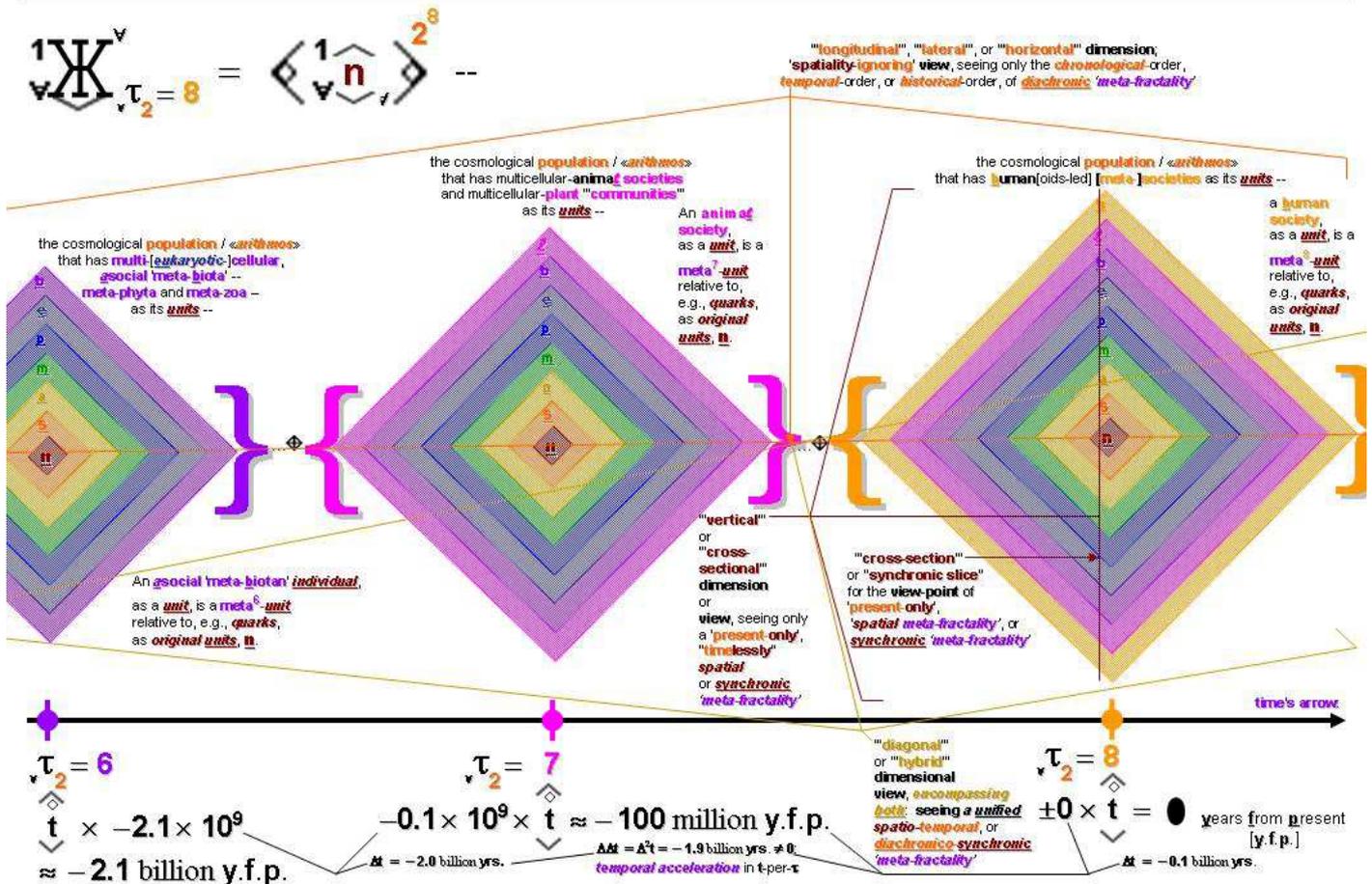
Viewed more *holistically* still -- and more *historically*, more *diachronically* -- our *cosmos* as a [as the ultimate manifest] *whole*, which we just viewed mainly *synchronically*, reveals itself to be a '*diachronico-synchronic*', '*spatio-temporal*', '*systematic/historical*' '*meta-fractal*':

Some of its *sub-nuclear units* constituted *sub-atomic units*; some of its *sub-atomic units* then constituted *atomic units*; some of its *atomic units* then constituted *molecular units*; some of its *molecular units* then constituted *pre-eukaryotic cellular units*; some of its *pre-eukaryotic cellular units* then constituted *eukaryotic cellular units*; some of its *eukaryotic cellular units* then constituted '*meta-biotic*', "multi-cellular" *units*; some of its '*meta-biotic*', 'meta-cellular' *units* then constituted *animal-society* and *plant- "community" units*; some of its *animal-society / plant- "community" units*, catalyzed and led therein by some of their *proto-human[oid]-animal society units*, constituted '*meta-society*' *units*; *human society units*;

We have depicted the above '*diachronico-synchronic meta-fractal universe*' via the following legend diagram, and via the 'natural-historical progression' "cutaway" diagram that follows that legend diagram:



**Depiction: 'Meta-Monadic', Nested, Dialectically 'Meta-Fractal' Character
of the Cosmos as a Whole**



[Note: Both the narrative and diagrammatical accounts, as given above, of the 'diachronico-synchronic meta-fractality' of the *total cosmos*, and of the *nested*, self-iterated, 'auto-«aufheben» self-construction' of *the cosmos as a whole*, all exclude any explicit mention of the 'allo-«aufheben»', 'ontological hybridization' processes, and of the resulting hybrid ontological products, as such, that *are* included explicitly in the 'epochal cumula' [in the "unaddable" [cf. Plato], 'non-amalgamative sums' of ontological category *units*/terms, for each epoch, $\sqrt{\tau_2}$, in the 'self-expanding cumula' representations that are generated progressively, as the cosmological epoch parameter, $\sqrt{\tau_2}$, advances in value, from 0 to 1 to 2 to 3 to 4 to 5 to 6..., by *Encyclopedia Dialectica's* 'Dialectical Theory of Everything Equation', Seldon Function 'Meta-Models' of the 'meta-dynamical meta-evolution' of this 'diachronico-synchronically meta-fractal universe'].

With the help of the perspective granted by the narrative rendition of the '*diachronico-synchronic meta-fractal universe*' earlier above, and by the two diagrams immediately above, we can now summarize the three distinct ways in which the total cosmos constitutes a '*meta-fractal content-structure*' --

1. **Synchronically**, when the momentaneous present of the 'physical space' of our *local* universe is imagined as a "vertical" cross-section or slice -- "perpendicular" to the "horizontal longitude" of natural-historical time, cut through the present '«*aufheben*»-hailstone' content-structure of our Terran *h*uman society.
2. **Diachronically**, when the "horizontal" dimension of natural-historical time, "perpendicular" to the "vertical" dimension of the momentaneous present of our 'physical space', is imagined as a natural-historical progression of rising but mutually-similar scales of increasing «*aufheben*»-inclusion of the *units* of the previous, already-inclusive *units*.
3. **Diachronico-Synchronically**, when both the scaled physical *units*-inclusiveness, and the mutual similarity, among the various "layers" or "scales" within the latest-to-arise *units* of the '*cosmos-hailstone*', are considered. They should be considered together with the 'temporal tail' of that "'latest-arrival'", or 'latest-arisal' -- the 'temporal trail' of past *units*-kinds, less inclusive than it is, and *formerly outside* of it, that led up to it. That "'latest-arrival'", or 'latest-arisal', should also be considered together with the continued present co-existence, with it, but *outside* of it, of representatives of each of those earlier-arisen kinds of *units*, kinds which are now also found 'scaledly'-included *inside* it. Thus, this perspective is *double-«aufheben»*. It is so, in the first instance, because each 'meta-meristematic' kind-of-being *unit*, or newest "'ontological category'" *unit*, of each epoch, exhibits, in[side]-itself, the most recent, as well as all of the previous, '«*aufheben*»-inclusioned' *units*. It is so, in the second instance, because each progressing natural-historical epoch exhibits not only its own, 'meta-meristematic' ontological increment of *units*, together with *units* inhering in all previous 'self-hybrid' *units*-kinds '«*aufheben*»-contained' *inside* of it, but also with representatives of even all previously-emerged 'self-hybrid' ontological increments of *units*, *outside* of it, and contemporaneous with it -- contemporaneous with the most advanced, 'meta-meristematic' kind of «*monads*», or kind of *units*, of the epoch in question, e.g., of our present epoch.

SUMMARY:

Our *Cosmos* is a '*diachronico-synchronic*' TRIPLE '*Meta-Fractal*' of «*Aufheben*», *Dialectical Self-Formation* and *Self-Organization*.

Ever after the «*arché*» itself, every successive such 'self-formation' -- including the presently most «*aufheben*»-advanced "'natural formation'", or «*arithmos*»-formation of *nature* -- already itself a '*synchronic meta-fractal*', always has two ['*meta-fractal*'] "'tails'". It has a *diachronic*, *historical-dialectical* ['*meta-fractal*'] "'tail'", which is also a *history*, a *story*, a ['*meta-fractal*'] "*tale*". It has also a *synchronic* ['*meta-fractal*'] "'tail'" [one which can also be "*told*", as a *systematic-dialectical* "*tale*" -- as a *systematic* rendition, or '*micro-historical*', '*micro-temporal*', time-taking *systematic-dialectical presentation* of the 'content-structure' of the present epoch of *the cosmos-event*].

Our *present* present, in which '*h*umans-led meta-societies' are the most '«*aufheben*»-advanced', most 'metamonadically advanced' «*monads*», *units*, or "*logical individuals*" *known to us*, presents also this *double-«aufheben»* aspect, of predecessor «*monads*» as both *internal* ['*meta-fractal*'] 'in-tail-ment', and as *external* ['*meta-fractal*'] "'tail'".

Present-*Internal*[ized] Tail', *In-Tail-ment*', *Tail In-ment*', or *Tail Internalization*'. Internally, the present-to-us, *h*umans-dominated global 'meta-society' *unit* which '«*aufheben*»-contains' us, also '«*aufheben*»-contains', overall, 'mutually-domesticated' and 'self-domesticated' animal societies and plant 'kind-communities', which, in turn, '«*aufheben*»-contain' 'multi-eukaryotic-cellular' meta-zoan and meta-phytan 'meta-biota', which, in turn, '«*aufheben*»-contain' eukaryotic cells, which, in turn, '«*aufheben*»-contain' 'pre-eukaryotic', "prokaryotic" cells, in the form of mitochondrial and 'chloroplastial' organelles, which, in turn, '«*aufheben*»-contain' molecules, which, in turn, '«*aufheben*»-contain' atoms, which, in turn, '«*aufheben*»-contain' pre-atomic/sub-atomic "particles", some of which, in turn, '«*aufheben*»-contain' the «*arché*» -- pre-nuclear/sub-nuclear "particles".

Present-External “Tail”. *Synchronically*-existing, presently-existing also, but *externally* to this presently most ‘*«aufheben»*-advanced’ “‘natural formation’” of Terran *h*uman society, or of ‘*meta-society*’, are other “‘natural formations’”, of ‘*«aufheben»*-organization’ advanced only to the level of ‘proto-*l*anguage-based anima*l* societies’ -- e.g., wild primates, wild wolves, wild horses, wild meerkats, dolphins, whales, bees, termites, ants -- and *p*lant ‘kind-communities’ -- wild rices, wild wheats, wild corns, wild mushrooms, wild maple trees -- which also *internally* ‘*«aufheben»*-contain’ representatives of all of their predecessor ‘self-hybrid’ kinds of “‘natural formations’”, *plus* still other “‘natural formations’”, of ‘*«aufheben»*-organization’ advanced only to the level of *a*social meta-zoan and meta-phytan ‘multi-eukaryotic-cellular meta-*b*iota’ -- e.g., grizzly bears, koalas, cougars, tigers, skunks, badgers, opossums, rhinoceroses, boa constrictors, giant anteaters, gopher tortoises, common frogs, sea cucumbers, most spiders, etc. -- and ‘solitary plants’, which also *internally* ‘*«aufheben»*-contain’ representatives of all of their predecessor ‘self-hybrid’ kinds of “‘natural formations’”, *plus* still other “‘natural formations’”, of ‘*«aufheben»*-organization’ advanced only to the level of “free-living” ‘single-cellular’ *e*ukaryotic cells -- e.g., fungi, amoeba, foraminifera, radiolaria, green algae, slime molds -- which also *internally* ‘*«aufheben»*-contain’ representatives of all of their predecessor ‘self-hybrid’ kinds of “‘natural formations’”, *plus* still other “‘natural formations’”, of ‘*«aufheben»*-organization’ advanced only to the level of “free-living” ‘single-cellular’ *p*rokaryotic cells, or *p*re-eukaryotic cells’ -- e.g., archaea and bacteria, including plankton, extremophiles, lithotrophs, etc. -- which also *internally* ‘*«aufheben»*-contain’ representatives of all of their predecessor ‘self-hybrid’ kinds of “‘natural formations’”, *plus* still other “‘natural formations’”, of ‘*«aufheben»*-organization’ advanced only to the level of “*m*olecules” -- e.g., poly-nucleotide nucleo-protein polymers, poly-peptide protein polymers, poly-saccharide polymer carbohydrates/sugars [e.g., glycogen, cellulose, chitin], nucleotide monomers, amino acid monomers, monosaccharide monomers, benzene, methane, carbon dioxide, water, cyanide, etc. -- which also *internally* ‘*«aufheben»*-contain’ representatives of all of their predecessor ‘self-hybrid’ kinds of “‘natural formations’”, *plus* still other “‘natural formations’”, of ‘*«aufheben»*-organization’ advanced only to the level of unassimilated, “‘elemental’” *a*toms’ -- e.g., Hydrogen, Carbon, Nitrogen, Oxygen, etc. -- which also *internally* ‘*«aufheben»*-contain’ representatives of all of their predecessor ‘self-hybrid’ kinds of “‘natural formations’”, *plus* still other “‘natural formations’”, of ‘*«aufheben»*-organization’ advanced only to the level of ‘*s*ub-atomic/pre-atomic’ “particles” -- e.g., protons -- which also *internally* ‘*«aufheben»*-contain’ representatives of all of their predecessor ‘self-hybrid’ kinds of “‘natural formations’”, *plus* still other “‘natural formations’”, of ‘sub-*n*uclear/pre-*n*uclear’ “particles”, also still present, e.g., including the freely-propagating photons of the cosmological microwave background radiation, the thermal radiation that fills the observable *cosmos* “almost uniformly”, as well as freely-propagating neutrinos, electrons, and positrons -- in general, quarks/non-Hadronic fermions, gluons and other non-Hadronic bosons, and leptons -- which constitute the *«arché»* of the *«archéonic consecuum»* of our *cosmos* per our *«dialectical meta-model»* thereof.

Past-External “Tail”; The Tale-“Tail”. *Diachronically, Historically*, in the past of our present, the *first*, *«arché»*-*«arithmos»*, or originating ontological *category/population*, of ‘sub-*n*uclear/pre-*n*uclear’ “particles”, became that *plus* the *second* *«arithmos»*, of ‘*s*ub-atomic/pre-atomic’ “particles”, which then all became all that *plus* the *third* *«arithmos»*, of “*a*toms”, which then all became all that *plus* the *fourth* *«arithmos»*, of “*m*olecules”, which then all became all that *plus* the *fifth* *«arithmos»*, of “*p*rokaryotic cells”, or ‘*p*re-eukaryotic cells’, which then all became all that *plus* the *sixth* *«arithmos»*, of “*e*ukaryotic cells”, which then all became all that *plus* the *seventh* *«arithmos»*, of *a*social meta-zoan and meta-phytan ‘multi-[eukaryotic-]cellular meta-*b*iota’, which then all became all that *plus* the *eighth* *«arithmos»*, of ‘proto-*l*anguage-based anima*l* societies’, and *p*lant ‘kind-communities’, which then -- at least in our present locale, within planet Terra -- all became all that *plus* the *ninth* *«arithmos»*, of ‘proto-human-animal-societies-led, other-animal-societies-internalizing, plant ‘kind-communities’-internalizing *«meta-societies»*, or *h*uman societies’, which then....

Links to Definitions of [Other] **F.E.D.** Special Terms Deployed in the Narrative Above --

anima~~l~~ societies

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/AniSocieties/AniSocieties.htm>

«**arché**»

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Arche/Arche.htm>

«**arithmoi**»

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Arithmoi/Arithmoi.htm>

«**arithmos eidetikos**»

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/ArithmosEidetikos/ArithmosEidetikos.htm>

atoms

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Atoms/Atoms.htm>

bion / biota

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Bion/Bion.htm>

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Biota/Biota.htm>

diachronic

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Diachronic/Diachronic.htm>

dialectic-in-general

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/DialecticsInGeneral/DialecticsInGeneral.htm>

dialectic of the dialectic itself

http://www.dialectics.org/dialectics/Welcome_files/F.E.D.,Letter%2007.Postludes%20Series.Postlude%20VII.The%20Dialectic%20of%20the%20Dialectic%20Itself.F.E.D.%20to%20Webmaster.www.dialectics.org.18AUG2011.pdf

dynamics versus “**meta-dynamics**”

http://www.dialectics.org/dialectics/Glossary_files/F.E.D._Definitions.DYNAMICS_vs._%27META-DYNAMICS%27.19DEC2012.jpg

“**eventity**”

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Eventity/Eventity.htm>

“**evolute**”

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Evolute/Evolute.htm>

evolution versus “**meta-evolution**”

http://www.dialectics.org/dialectics/Glossary_files/F.E.D._Definitions.EVOLUTION_vs._%27META-EVOLUTION%27.19DEC2012.jpg

genus, «genos»

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Genos/Genos.htm>

«**monad**»

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Monad/Monad.htm>

ontology

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Ontology/Ontology.htm>

species, «species»

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Species/Species.htm>

synchronic

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Synchronic/Synchronic.htm>

temporal acceleration

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/TemporalAcceleration/TemporalAcceleration.htm>

time

<https://www.point-of-departure.org/Point-Of-Departure/ClarificationsArchive/Time/Time.htm>