0   Cognition

Approach to all objects is by cognition.

Udo Frentzen 2016/19

0 1   Remarks

Intent of the essay is to give a succinct outline of the factors of cognition.
The author's approach is reflective, defensive, hopeful, literary participation.
Definition of truth for the essay is: Have all factors of cognition been considered?

1a) Definition
Cognition is transformation of forms of being into forms of consciousness.
Its components are therefore the object, the subject and a relation between them.
At center stands the object at hand throughout all scientific, contemplative and aesthetic research.
Every object entails at least a an objective, subjective and relational factor with corresponding properties.
Every object entails at least a natural, human and ethical dimension with corresponding standards.
Their domain reaches throughout the micro-macro-cosmos from beginning to end of time.
Cognition is a mental-psychic-neurologically constructed representative model of an object.
Mental-psychic representation is consciously by visualization and can be stored in memory.
Neurological representation is by bio-chemical-electro-magnetic states and processes.

1b) Objective factors
Objective factors as practical tools achieve description of the item at hand with its forces and properties.
1b1) The pragmatic status can be object surpassing, adequate or inhibited.
1b2) The theoretical status is open ended. There is no definite, cognition exhausted object.
1b3) Errors can multiply along publication to teaching to applications into gross inhibiting factors.
1b4) Limits are set by mental-administrative-technical tools' range and precision, by observer's position and capacity and by environmental physical-social forces and conditions.

1c) Subjective factors
Subjective factors determine in first place the observer's position.
1c1) Driving motor of all steps of cognition is its intent.
    c1,1) Main intent is to shed light on an object and to investigate further for a more accurate description.
    c1,2) Epistemic research goals are knowledge and avoidance of errors.
    c1,3) Pragmatic research goal is realization of a specific, envisioned project.
    c1,4) Political-social research goal is to embed enlightenment into public participation.
    c1,5) Scaled up intent is promotion of the spirit of man and integrity of nature.
1c2) Starting points are questions and searches. Basics are:
    c2,1) What is nature? Who is man? Who is God? Which is the best way to proceed?
    c2,2) Searched is intrudingly and pryingly to find a starting point for the tools of cognition, first zooming into the item and then proceeding from the simple to the complex.
    c2,3) The initial steps of focus and observation are the first bottlenecks and have to be studied and practiced in all human activities. All subsequent steps of mental and technical processing rely on it.

1d) Cosmic dimensions
Cognition is a daily and the most basic of all individual-collective long term running challenges.
Man sets out to explore an ocean and beyond where he can discern so far not more than a single drop.
1d1) Preconditions are
    d1,1) Physiological autonomy of body and mind.
    d1,2) Cultural competence in language, logic, mathematics, method and data processing, that every object, its term, logical space, calculation and methodological treatment are according to its properties.
1d2) Approach is with
    d2,1) Circumspection against a background of vast non-knowledge. 90% of truth is truth finding.
    d2,2) Courage to break through inhibiting factors like special positive aggressive and negative oppressive interests of cognition, publication, discussion and application, as general public knowledge is largely in conflict with pragmatic statesmanship.
1d3) Aspirational red thread
    d3,1) Ethical, natural and human framework values with freedom of truth.
    d3,2) Canon of knowledge, allowing universal treatment of objects by objective, verifiable, complete, balanced descriptions and public discussions.

0 2   Standards

2a) Values
Man adopts for self-interpretation and direction to his actions a self-set defining value and standard: human dignity, being universal, invariable, inalienable, codifiable, falsifiable and livable.

2b) Value classes
2b1) Cosmic values are contributing to life, truth, unity and environment for the long term future of man.
2b2) Existential values protect basic human rights to life.
2b3) Humanitarian values protect basic personal rights to growth.
2b4) Environmental values protect basic living environments of nature.
2b5) Universal values protect basic rights, applying to all objects in past, present and future.
2b6) Framework values are
   b6,1) Ethically: unity of mankind, justice, due process and conflict solving.
   b6,2) Naturally: integrity of nature.
   b6,3) Human: collection, management, expansion and application of knowledge.
2b7) Object values are
   b7,1) Ethically: non-violence, accuracy, completeness and transparency.
   b7,2) Naturally: application by reason.
   b7,3) Human: application by maturity.

2c) Value scale
Values are ordered hierarchically according to significance and range of validity.
They are connected by an unbroken interlinked tree structure.
There are no political or discipline specific values, which cannot be deduced from the dignity of man.
2c1) Primary universal values
   c1,1) Primary universal spiritual value is love, being kind, patient and protecting. It abhors violence.
   It extends to the low (Mat 25,40), lost (Luk 15,4) and hostile (Mat 5,43).
   c1,2) Primary universal human value is dignity, extending equally to all, disregarding origin, race, color, gender, age, position, culture and faith.
   c1,3) Primary universal natural value is integrity of nature.
2c2) Secondary universal spiritual, human and natural value is truth. It abhors deception.
It extends to all objects as far as self-awareness, curiosity, imagination and ambition do.
   c2,1) Truth is found by cognition, first by an intruding, observing, questioning, investigating search, exhausting available means to generate knowledge.
   c2,2) Truth in its narrow content means congruence of a description with its object in one to one accuracy from property to term to sign to communication to documentation.
   c2,3) Truth in its wider content means an accurate, complete, transparent description of an object within the dimensions of man's radius of action and responsibilities.
   c2,4) Truth in its cosmic content means an accurate description of an object within the dimensions of nature and the infinite.
   c2,5) Investigating an object, truth is in respect to God a comprehensive analysis towards innocence, in respect to man and nature a comprehensive analysis in spirit of man and in integrity of nature.
   Their research adding each other, they stand on a linked, equal, balanced and cooperating level.
   c2,6) A paradigm, a modelled research procedure, gains by theoretical, methodological and environmental assumptions and conclusions cognitive success with valid knowledge.
   c2,7) Truth application is object specific according to its function, eg subject-object related, positively promoting-negatively defending and context excluding-including.
2c3) Tertiary universal and primary value for society is unity of mankind. It abhors segregation.
As existential value it is based on equity and justice with the rule of law.
2c4) Fourth universal and humanitarian values are freedoms, emancipation and common welfare.
2c5) Professional standards are guidelines of state of the art field knowledge and praxis.
2c6) Item specific standards are bench marks of properties, effectiveness and performance.

0 3   Object

Object handling factors are worked off sequentially and are mostly not to be bypassed or interchanged. Starting out with questioning, the researcher's position states object of study, epistemological intent, pragmatic intent, assumptions, methods and tools.

<u>3a)</u> Focus
Questioning, search and focus center on the item at hand, its identity, property and sum of properties.
It can be an object of any class, state or appearance.
It is stripped as far as possible of prior assumptions, systematic knowledge and context.
It is an isolated unit of an appearance with an isolated property.
It is practically the smallest unit of observation, being prepared by eg labelling, modulation and fixture to become with publication and tested non-falsification a recognized objective fact.
3a1) It has identity by
   a1,1) Pointedness through focus.
   a1,2) Isolation through cutout from its neighbors, environment and background.
   a1,3) Limits in form, space and time.
   a1,4) Identifiers like discreteness, distinctiveness, individuality, denotability and mappability.
3a2) It has a property by
   a2,1) A characteristic status or behavior.
   a2,2) A relation in interaction with another object.
   a2,3) A physical, human, spiritual in-external force with action and reaction as responsible cause for generation, preservation, alteration, combination and transmission of a property.
   a2,4) Meaning in a cultural context.
3a3) Its sum of properties is detected by repetitive foci from all angles, shifting in
   a3,1) Place, eg conditions of background and environment.
   a3,2) Time, eg behavior under in-external forces.
   a3,3) Scale, eg into the micro- and macroscopic.
   a3,4) Range, eg in back and forward extrapolation.
   a3,5) Perspective, eg in subjective, relational, objective aspects.
   a3,6) Dimension, eg in natural, human, spiritual dimensions and their realities and categories.
3a4) Conglomerate properties
Conglomerate items with several basic components are divided and combined in their parts and focused
   a4,1) Each basic component separately.
   a4,2) All possible configurations.
   a4,3) The conglomerate unit as a whole.
   a4,4) All likely additions.
   a4,5) Their interdependencies and -actions.
   a4,6) Their synergistic-antagonistic effects.
3a5) Evaluation
   a5,1) Focus specific standards of truth ask for a complete list of properties of an item from its generation to handling to application to consequences.
   a5,2) Questioning, search and focus are the first bottleneck to be able to treat human, natural and spiritual objects according to their true properties, perspectives, dimensions and realities.
   a5,3) One faulty step derails the process. Especially the first steps of cognition have to stand up against errors, omissions, irrationalities and interferences.
   a5,4) A faulty step can turn inhibitive by application in a weapon, misuse of a device or negative mass effect and in final consequence self-destructive.
   a5,5) Positive and negative consequences of a factor can be estimated by comparison against a hypothetical simulation of a course of events without that factor.

3b) Observation

Observation attaches a focus at the identified item at rest or in motion and takes up its raw data to sensual perception to mental consciousness, where they are registered and stored in memory.

It strips itself likewise as far as possible of prior assumptions, systematic knowledge and context.

It proceeds aggressively intruding, surmounting obstacles and exhausting available means.

Its mode reaches from planned, attentive and systematic to incidental, superficial and spurious.

Experimental observation controls in addition naturalistic or laboratory conditions.

Participant observation records as member of the subjects' community characteristics and environment.

It records data of a characterizable property according an appropriate yardstick and method.

3b1) Accuracy

    b1,1) It takes up unbiased, valid data from the item at hand, avoiding subjective, technical and systematic errors, environmental interferences, their multiplication and correcting for statistical variations.

    b1,2) It tests subjective and technical scope, range and conditions.

    b1,3) It repeats the observation for confirmation and to determine the degree of precision.

3b2) Direct scanning of objects of any class

Successive observations gain data cuts through space and time.

    b2,1) Varying distances change resolution and frame.

    b2,2) Varying angles yield 1D, 2D and 3D views.

    b2,3) Varying items of a non-uniform group yield surveys.

    b2,4) Scanning of individual objects

        b2,4,1) Individual, short-medium term attention yields a property with status, process and change.

        b2,4,2) Periodic, long term sampling yields a longitudinal profile up to life cycles.

        b2,4,3) Continuous, long term monitoring constitutes a case study.

    b2,5) Scanning of technically related, uniform objects

        b2,5,1) Random, small-large size, instant sampling yields statistical averages.

        b2,5,2) Periodic, small-large size, long term sampling yields profiles up to life cycles.

        b2,5,3) Continuous, medium term monitoring yields windows of operation.

        b2,5,4) Continuous, long term monitoring yields gapless, detailed threads.

    b2,6) Scanning of individually different objects

        b2,5,1) Random, small-large size, instant sampling yields a cross section.

        b2,5,3) Continuous, small-large size, long term monitoring yields a cross-sequential profile.

        b2,5,5) Selected, medium term sampling of two variables yields a correlation factor.

        b2,5,6) Selected, medium term sampling of two ethnicities yields a cross-cultural study.

3b3) Indirect scanning of human-spiritual forces

    b3,1) Human needs, intentions, conceptions and convictions are stated with the author's position.

    b3,2) Authentic, missing and pretended statements are investigated by reflective observation of traits, behavior, situation, context, etiquettes and norms with backwards inferences, not to allow inherent criminal capacities a run of spoliation.

3b4) Technical devices

    b4,1) They can refine the accuracy of observations.

    b4,2) They enable indirect measurement of natural magnitudes otherwise not accessible.

    b4,3) They enlarge the range of physical perception to the micro- and macro-cosmos.

    b4,4) They accelerate input, processing and output of large multi-media data volumes.

    b4,5) They achieve real time process control, system integration and automatization.

    b4,6) They require tests for effectiveness and performance, calibration, maintenance and safety rules.

3b5) Data recognition

    b5,1) The raw data are recognized in space and time as an identity and property.

    b5,2) They are collected in a statement, table or picture as answer to the initial question.

    b5,3) They are compared with existing feeling, orientation, experience, knowledge and expectations of all steps of the present process of cognition and the general mental horizon.

    b5,4) The feedback loop is handled with outmost caution not to introduce unwarranted assumptions.

    b5,5) It is evaluated at every step to be, if necessary, interrupted and redirected.

3b6) Non-observables are eg past, concealed present, future and inaccessible entities.

3b7) Evaluation

Observation specific standard of truth is 1 : 1 congruence of actual and observed property.

Common methods of measurement are standardized by international agreements.

<u>3c)</u> Denotation
Denotation attaches to the item in focus a term with a phonetic signal and a written sign.
3c1) Term construction
  c1,1) It is derived by interaction of objective item, mental term, linguistic word and semiotic sign.
  c1,2) It is derived out of a necessary attribute of the item to be representative, intelligible, reflective, objective as well as clear, short, precise, specific, ordered, neutral, compatible and not alone negative.
  c1,3) It is by semantic being eg constative, representative, regulative or expressive, by semantic function eg explicative, expressive, instrumental, moralistic or evaluative.
3c2) Phonetic signal
  c2,1) It is as word or word sequence part of a competent language, an open, heterogenous system, being recognized, formal, intersubjective, neutral, stable, functional with vocabulary, phraseology, pronunciation and grammar.
  Its vocabulary is organic, multilevel in phantasy, comprehension, knowledge, dimensions and realities.
  c2,2) Scientific terminology expands common usage by eg field specific definitions, theoretical concepts, function assignments and unobservable entities to become precise and non-contradictory.
3c3) Sign
  c3,1) It is part of a reservoir of signs like icons, indices and symbols, an open, heterogenous system, compatible with a competent language to carry information about the item from A to B.
  c3,2) Encoded signs can be technically processed to communicate in any medium over any distance.
3c4) Evaluation
Denotation specific standard of truth is 1 : 1 : 1 : 1 : 1 congruence of actual and observed property, term, signal and sign.

<u>3d)</u> Description
A description reproduces an applied focus, an observed item, a property with status, process and change for record and communication as spoken depiction, written text, demonstrative picture, graphical representation and logical/mathematical symbols.
A list of items and valid properties is to become part of the canon of knowledge.
3d1) Necessary content
  d1,1) It states the author's position with intent and issue specific definition of truth.
  d1,2) It states standards, means, methods and results.
3d2) Text
  d2,1) It is out of phonemes, morphemes, lexemes, syntax, pragmatics, semantics and linguistics.
  d2,2) It forms eg atomic and conglomerate terms, sentences, listings, definitions, axioms, analyses, conclusions, laws, prognoses, instructions, themes, theories, narrations and fiction.
  d2,3) Paralinguistic are eg sound, volume, intonation, pitch, range, rate and body language.
3d3) Evaluation
  d3,1) Description specific standard of truth is 1 : 1 : 1 : 1 : 1 : 1 congruence of actual and observed property, term, signal, sign and description.
  d3,2) Descriptions as tools of language are sensitive to paradigms and a single missing, distorted or overextended content feature can corrupt it in its entirety.

<u>3e)</u> Deliberation

Deliberation is a data treatment station with feedback loops between all steps of cognition.

It comprises standardized, retraceable processes: classification, complementation, analysis, synthesis, pragmatic assessment and disposition.

3e1) Classification as initial mental fixture assigns the objective item and property to a class.

    e1,1) It is listed with all its properties in intention (content), extension (cases) and their relations.

    e1,2) It is typified according to its primary real semantic content.

    e1,3) It is classified under the next higher genus and by art differences to become a part in an open, heterogenous taxonomic systems of all objects. It allows one like all treatment from question to application with eg standardization, methodization and economization. The classes and categories are:

        e1,3,1) Spiritual: God related determination of His will and address of major issues.

        e1,3,2) Human: Subject related content, appearance, environments and inhibiting factors.

        e1,3,3) Natural: Object related quality, quantity, relation and modality.

3e2) Complementation stocks up the list of detectable properties in all classes and categories.

They are added by generally publicly available information and detailed investigation.

The necessary data with their complexity serve as intellectual base for further treatment.

    e2,1) Content with natural, human and spiritual forces, properties and causal chains in space-time.

    e2,2) Reality, eg spiritual, natural, human, mental, psychical, emotional, pragmatic or fantastic.

    e2,3) Functions, states, structures, processes, paths, mechanisms, events and effects.

    e2,4) Logical and mathematical space, preserving identities, consistency and non-contradiction.

    e2,5) Presentation, eg, theme discussion, medium, event staging and multi media.

    e2,6) Environments, eg situation, context, praxis, framework, heritage and tradition.

    e2,7) Cosmic environment, eg long term capabilities, conditions, boundaries and limits.

    e2,8) Inhibiting factors, eg non-knowledge, uncertainties, risks, dangers and possible damages.

3e3) Analysis

    e3,1) Separation into constituent parts for individual and combinational consideration.

    e3,2) Listing of qualitative properties by semiotic, semantic and contextual meaning.

    e3,3) Listing of quantitative properties by a nominal, ordinal, interval or rational scale.

    e3,4) Deduction of logical follow up statements.

3e4) Synthesis

Synthesis combines simple, separate, unrelated concepts into one complex, conglomerate concept as eg the resolution of contradicting thesis and antithesis into one statement on a higher, more abstract level.

3e5) Pragmatic assessment according to

    e5,1) Research results, uncovering new knowledge, the unexpected, exceptional, hidden, difficult to detect, inconsistent and paradigms contradicting.

    e5,2) Significance of issue and social weight.

    e5,3) Environmental opportunities and barriers.

    e5,4) Quality of design, object and maintenance.

    e5,5) Operational effectiveness, performance, ease and safety.

    e5,6) Desirability, achievability and affordability.

    e5,7) Energy consumption.

    e5,8) Public acceptance.

3e6) Disposition

    e6,1) Public issues are passed on to interpretation, evaluation and publication.

    e6,2) Private endeavors are passed on to development, production and service.

3e7) Evaluation

    e7,1) The standards of truth have to be applied in their narrow, wider and cosmic dimensions.

    e7,2) In deliberation they clash head on with special interests of cognition and applications.

3f) Interpretation

Interpretation draws heavily on antique and medieval scholarship and present day natural sciences with their political-social histories, world views and philosophies of research.

It strives from individual, detailed exposition to generalizing conceptualization at the last step.

3f1) Exegesis of His Word

Exegesis lets His Word being grasped by His Grace in faith and sound theology.

At the center stand word and sense in direct language to further adequate reception and response.

   f1,1) Main intent is empirical, aesthetical and spiritual reconstruction, interpretation and evaluation of testimonials and the scriptures (depositum fidei) by a diversity of methods.

   f1,2) Text reconstruction aims at recovery of the original or furthest back wording, language, document, illustration, commentary, distribution, version, translation and media praxis.

   f1,3) Situational analysis describes the immediate psychological, communicational, communal, social, economic, scientific, political, zeitgeist, ritual, theological conditions and context of place and time.

   f1,4) Text analysis describes form, style, content, semantics, grammar, syntax, diction, structures, relations, models, references, creations, paradigmatic and syntagmatic lines, semiotics, pragmatics, mediums, performances, artistic renderings, position, logic, function, usages, variations, statistics, coherence, elasticity, centricity, stability, uniqueness, aesthetics, entropy, context and inter-context.

   f1,5) Text history describes its conditions, traditions, editions, paths, interpretations and influences.

   f1,6) Text comparison describes its traditional, cultural and inter-confessional contexts.

   f1,7) Text Interpretation

   ◦ It highlights the intent of the author with his perspective, biography and real life conditions.
   ◦ Teleologically it describes theme, sense, purpose and spirit of the word.
   ◦ Tropologically it extracts life experiences and moral guidelines for praxis.
   ◦ Typologically it connects events of the Old Testament with those of Christ.
   ◦ Eschatologically it focuses on future events up to the last judgment.
   ◦ Femininely it eliminates prejudices because of origin, gender, age, race, language and culture.
   ◦ Considered deductively and inductively, restrictively and extensively are place, time, type, commonality, generality, similarity, analogy, probability, possibility, functionality and complexity.

   f1,8) Assisting are clarifications, outline of limits, adaptions to language and culture.

   f1,9) Assisting are archeological findings and scientific methods of all fields.

   f1,10) Development of teaching

      f1,10,1) In study by opening up of new sources, advances in scientific-technological knowledge, raising of standards, public discussions and new grasping of issues.

      f1,10,2) In inter-confessional dialogs by rectification, compensation, reconciliation, hospitality, tolerance, integrative praxis, respect of human rights and recognition of interdependencies to arrive at incorporating statements of faith with superseding, generalizing und unifying principles.

   f1,11) Conceptualization

      f1,11,1) Strictly controlled, authorized listing of the depositum fidei.

      f1,11,2) Dogmatic summary of His Word in a catechism.

3f2) Hermeneutics of secular verbal, written and multi-media communications
Hermeneutics let secular expressions become understandable in maturity.
An objective, semantic context is visualized in a subjective mind for mental processing and response.

f2,1) Main intent is empirical, aesthetical and human reconstruction, interpretation and evaluation of the selected material from the author's intention to its reception history by a diversity of methods.

f2,2) Text, context and situation reconstruction and analysis are comparable to those of exegesis.

f2,3) Text interpretation
- It highlights the intent of the author with his perspective, self-understanding and background.
- Truth of documented facts, fictional characterizations, similes and allusions.
- Rules of spelling, punctuation, hyphenation, grammar and diction.
- Form like documentation or fiction as roman, short story, drama and poetry.
- Style of presentation like description, narration, persuasion and accusation.
- Elements like protagonist, antagonist, narrator, plot, conflict, theme and mood.
- Figurative language like metaphor, hyperbole, personification, allegory and irony.
- Structures like repetition, alteration, contrast, frame, isocolon, hyperbation and episterophe.
- Levels of meaning like denotation, symbol, allegory and metalepsis.
- Morals like quintessence and behavioral advice.
- Emancipative drives like investigative journalism and social activism.
- Existentials as basic requirements and conditions of human life.
- Situations with options, hopes and hypothetical events.
- Prognostics like forecasts and warnings.
- Criticism of individual-social forces, institutions, events, environments and ways of thought.

f2,4) Reception history traces the retrospective interpretations of cultural events in the communicative chains of an author's publications, audiences' analyses, discussions and responses from all backgrounds over time. The author's intentions can be accepted, negotiated, re-interpreted and opposed. They can influence the work of subsequent authors and the propagation of thoughts in eg political-social awareness of issues, self-understanding, life style, zeitgeist, standards and history of mind.

f2,5) Conceptualization
Systematic history of art condenses as art epochs the abstract, symbolical, common cultural characteristics of an artist, group of artists, techniques, tendencies, schools, regions and environments.

3f3) Natural philosophy of phenomena of nature
Natural philosophy lets phenomena of nature become explainable in reason.

f3,1) Main intent in exploration of the cosmos is empirical laboratory reconstruction, explanation and evaluation of its natural phenomena from matter to plant, animal and human life by scientific methods.

f3,2) It shows natural-human causes-effects in all aspects with possible applications and misuses.
Formal nomological deduction requires empirical content, law likeness, derivability and truth.

f3,3) Scientific methods with hypothesis, analysis, synthesis and controlled experimental observation and deliberation gain qualitative-quantitative knowledge about objects with their forces and properties.

f3,4) Forces are responsible for past, present and future properties of objects
f3,4,1) Physical forces are the strong, weak, electro-dynamic, gravitational ones in space-time.
f3,4,2) Bio-chemical forces lead over evolutionary times to growth with differentiation of functions.
f3,4,3) Human-social forces show themselves in their expressions by communication and action.

f3,5) Forces extend along a chain of causality
f3,5,1) Cause is a sensory confirmed deterministic or probabilistic regularity.
f3,5,2) Mechanism proceeds in a directed, transient path sequence of pre- to post-ceding events.
f3,5,3) Effect is the final observed result, which can lead in a wider context to further consequences.

f3,6) Laws of nature relate a force and property qualitatively-quantitatively to its dependent variables.

f3,7) Conditions delineate co-determining factors and limits of validity.

f3,8) Predictions of forces' and objects' behavior are possible under comparative conditions.

f3,9) System of natural phenomena is a two or more forces dynamically interacting, initial closed or open structured state, going via several mechanisms towards a labile equilibrium or final steady state.

f3,10) Explanations can be refined by more explicative interpretation and supersede previous results.

f3,11) Conceptualization
f3,11,1) Universal validity of laws is assumed by enumerative-inductive reasoning until falsified.
f3,11,2) The logical structure of the sciences lists a compendium of comparative laws of nature.

3g) Evaluation
Evaluation draws an interim balance of the cognitive chain of operations from question to interpretation and incorporates the requirements down to applications, separating items to go back, halt or proceed.
It strives in free human choices of positive and negative consequences to arrive at sound results.
Its position rests within the cosmic dimensions of man, nature and God.
Item and property are listed with truth, technical , common ethical requirements and their potentials:
3g1) Truth requirements are eg sincerity, objectivity, congruence, accuracy, complementation, plausibility and information of the general public of safety, precautionary and supervisory needs.
3g2) Technical requirements are eg usability, desirability, affordability, significance, professional standards of performance, effectiveness, environmental compatibility and avoidance of negative mass effects.
3g3) Ethical requirements are cosmic, universal, existential, humanitarian and environmental standards, applied to individual objects and general political-legal-social frameworks.
They are realized in responsibility by public discussion, problem-conflict solving and ethics.
   g3,1) Man is responsible to act in the stewardship of the creation.
   g3,2) He can be held accountable, as he can research, know, precalculate, restrain and advance his singular and habitual, individual and collective, present and future actions.
   g3,3) General responsibility rests with the sovereign, the people, on a global, timeless scale.
   g3,4) Responsibilities are shared according to contributing parts by eg the researcher, developer, political-social sponsor, producer, sales person, end user and overall affected general public.
   g3,5) Faulty execution requires damage assessment and re-establishment.

3h) Documentation
Documentation records the results of all steps of cognition on a time stable, environmentally protected substrate for storage and communication as eg artefact, text, sound track, drawing, picture, multi-media, performance, model, simulation and scenario.
3h1) Stated with it are author, place, time, conviction, intent, conception, definition of truth, approach, perspective, devices, methods, range of error, references, conditions, context, comments and provisions.
3h2) Storage in the researcher's archive as a running log and as record for reference and publication.

3i) Propositional support
Copies of the documentation are handed to peers in the professional field for review.
Evaluation ranges from support to advice, comment, reflection, concern, objection, criticism to rejection.
Confidence of accuracy can be cartesian ideal, corresponding, abductive or pragmatic.
Confirmation of scientific facts ranges from plausible to flawed by criteria of
3i1) Stringency of standards.
3i2) Validity of assumptions.
3i3) Validity of reasoning.
3i4) Adequacy of methods.
3i5) Constructability in faith, understanding or explanation.
3i6) Reproducibility by replicative tests.
3i7) Objectivity by 3rd party confirmation.
3i8) Traceability along a line of argumentation.
3i9) Predictability of behavior by eg divine revelation, human intentions and natural forces.
3i10) Non-falsification by a contradicting fact or competing theory.
3i11) Degree of cognitive consonance.
3i12) Number of confirmations.
3i13) Quality of references.
3i14) Coherence of a system of knowledge by eg analogy, amendment, extrapolation and unification.
3i15) Form, supporting eg content, context and workmanship.
3i16) Controversy highlights eg divergent evaluation and interests of cognition.
3i17) Accuracy and reliability of equipment.
3i18) Appropriate handling.
3i19) Ethical means of acquisition.

<u>3j)</u> Publication
Publication makes documented and confirmed information available to the general public.
3j1) Publisher
   j1,1) A publisher reviews, edits, stores, reproduces, announces, distributes and markets the material.
   j1,2) He can be eg author, performer, publishing house, speaker of an organization and lone voice.
   j1,3) Medium can be eg flyer, bill board, web posting, daily press, magazine, video, scientific journal, forum discussion, play, concert, underground channel, zeitgeist, rumor and mood.
   j1,4) Recipient can be eg investigator, acute observer, chance witness, local audience, privileged circle, affected people, interested parties and the entire population.
3j2) Knowledge
   j2,1) The information is constituted as a fact.
   j2,2) It is the basis of objective knowledge, imaging realities with capabilities and limits.
   j2,3) It comprises equally object and framework standards.
   j2,4) It represents the present day mental horizon.
   j2,5) It is applied in all theoretical-practical scientific, commercial, social and political fields of life.
   j2,6) It is the basis of long term, systematic development to expand human boundaries.
3j3) Management of the canon of knowledge provides
   j3,1) Objects' properties, forces, functions, structures, processes, relations and possible applications.
   j3,2) Sources with preconditions, standards, concepts, methods and tools of generation.
   j3,3) Classification according to differentiated, hierarchic and networked systems of knowledge.
      j3,3,1) In place from the micro- to macro-cosmos.
      j3,3,2) In time from the beginning to the end of the universe.
      j3,3,3) In scope through all layers of reality.
      j3,3,4) In a system of the sciences with a logical structure of concepts.
      j3,3,5) In sub-classifications as empirical-theoretical, declarative-procedural and explicit-implicit.
      j3,3,6) A value scale with assigned responsibilities and tasks.
   j3,4) Check, integration, completion and correction of new knowledge.
   j3,5) Principle of expansion is continuous application of the tools of cognition to increase the data base with sound facts, assumptions, working hypothesis, methods and skills.
   j3,6) Storage in environmentally protected private-public libraries to serve as distributive cognition with available, accessible, ordered, surveyable presentations a global task sharing network of computer and people for copying, distribution and use.
   j3,7) History of reception with discussions, context, corrections, applications and predictions.
   j3,8) A selection of relevant records over historic time spans.
   j3,9) Guarding against misuses of knowledge by eg restriction, manipulation and missapplication.

<u>3k)</u> Public discussion
Public discussion invites the general public to contribute to the pending agenda of theoretical and practical tasks and bring diverging tendencies into the open and to problem-conflict solving.
General issues are public because of the universals of dignity, truth, knowledge and codetermination.
Public information allows transparent truth tracking for confirmation.
It allows universal treatment of objects of any class and magnitude in any context and environment on all levels of reality, abstraction and complexity in all applications, yielding objective, valid knowledge with its relevant aspects, contributed by all the people.
3k1) Pool of voices springs out of the scientific community and the whole spectrum of the population.
The interdisciplinary scientific community, the 'invisible college', comprises colleges universities, academies and laboratories; scientific-aesthetic-contemplative institutions; associations for the advancement of the sciences, technologies and applications; professional journals, periodicals and magazines.
3k2) Intentions range from investigative effort to information exchange to image fascism.
3k3) Main intent is to embed enlightenment into political-social participation.
Scaled up intent is to arrive at a durable society with long term problem-conflict solving.
3k6) Means as base pattern are those of enlightenment: questioning, search, cognition, description, interpretation, evaluation, publication, design of expression, vote, regulation, realization and supervision.
Enlightenment as non-violent means of political will, persistence, language, presentation, regulation and follow up overcome hostile inhibiting factors, - an act of violence remains always an act of despair.

3l) Problem solving
3l1) Main intention is to alleviate a natural or human deficiency, threatening a physical damage, which can be solved mostly by administrative and technical means.
3l2) Issues range from daily needs to creeping erosions to catastrophic incisions.
3l3) Standards are those of human dignity, integrity of nature and their value scale.
3l4) Legal sources are national constitutions with their bodies of law and international law.
3l5) Human resources comprise the spectrum of the population with the press, public authorities, project leaders, advisory panels and the scientific community.
3l6) Material resources comprise existing-set up, domestic-foreign and private-public institutions.
3l7) Decision is cast by a vote of the community.
3l8) Implementation is achieved by eg planning, financing, realization and oversight.

3m) Conflict solving
Political-legal resolution constitutes the most urgent task as social forces are mostly in conflict, in a permanent war with opposing interests. It centers on social strife with civil discontent, unrest, lawlessness and violence against human health, material goods and the environment.
3m1) Main intent is to defuse and protect against acute threats of physical injury and damage.
Scaled up intent is observation of nationally-internationally legally protected human and nature's rights as an aspirational red thread for long term human development and survival.
3m2) Parties are individual, national and international organizations and sovereign nations.
3m3) Material resources are national and international court systems and an International Executive Political-Military Panel.
3m4) A workable, ratifiable solution is gained out of public discussion and negotiations in private-public-international mediation, arbitration, litigation and intervention towards a mutually advantageous rapprochement by eg clarification, de-escalation, incentives, compensation, compromise, cooperation, compensation, reconciliation, levelling of inequalities and as a last resort by tribunal and intervention with
    m4,1) Analysis of the social-political constellation.
    m4,2) Legal resources of national constitutions with their bodies of law and international conventions.
    m4,3) Institutional resources of national and international court systems.
    m4,4) Diplomatic resources of inspectors, neutral intermediaries, mediators and arbitrators.
    m4,5) Military resources of local authorities and an international intervention force.

3n) Development
Development of man made objects out of natural and human resources is in continuation of expression a universal human activity. Molding an object, it aims at an advancement in realization of human potential.
It is initiated by spiritual, mental, psychological, emotional, biological and bio-mechanical forces in combinations. Only limited by imagination, it reaches across all layers of reality.
3n1) Goal orientation centers on the desired object for in depth attention.
3n2) Means are scientific, artistic and contemplative research, soft and technical skills, experience, knowledge, know-how, labor, natural resources and financing.
3n3) Creative development generates improved existing, innovative, speculative and visionary objects, which did not exist before in construction of future living environments.
3n4) Qualitative development achieves a qualitative transformation of a human drive into a mental-human-natural product with merit by applying standards of sound theology, reason, maturity and ethics.
3n5) Long term, large scale, institutionalized, systematic research, development and their applications refine, add to, correct and spread present knowledge. Generated are:
    n5,1) A functionally intertwining, technological civilization with mass utilization of resources, commercialization, urbanization, modernization, networking and globalization.
    n5,2) Longer, faster, scaled up, more varied and detailed, interacting, interdependent, complex chains of actions and also miniscule, far off, hard to detect, unregulated, incalculable areas.
3n6) Increase in overall comprehension with values, responsibilities, priorities and means of enlightenment will expand human boundaries for long term survival in changing cosmic environments:
    n6,1) Theological teachings by spiritual forces through faith and sound theology.
    n6,2) Mental conditions by social forces through maturity, research and development.
    n6,3) Natural conditions by social forces through reason, research and development.

0 4   Relation

Cognition starts out along a relation from the object to the investigator by observation.
It stretches from the investigator over several steps and lengths to the general public.

4a) Information
4a1) Raw data are signs on a substrate.
4a2) They become information by a structure with coding, syntax, semantic and pragmatic.
4a3) They require the standards of truth with accuracy, congruence, complementation and publication.
4a4) They require a competent language, an open, heterogenous, recognized, formal system.
Language stands at the center of human praxis with text and picture as means of conception, interchange, socialization, spread of knowledge and discussion of issues.
4a5) A unit of information conveys a single fixed yes/no statement as a measurable quality and quantity.
It represents a specific property of an object of any class.
It can be processed for eg en- and decoding, search, review, storage, duplication and distribution.
4a6) A message comprises a series of information units to convey a meaning within a context.
4a7) Its scaled up function is the increase of knowledge.

4b) Medium
Medium of a connecting relation is a physical object, a naturally present substance or a man made infra-structure, transmitting from a sender data, energy or matter over a distance to a receiver.
4b1) Appearance can be
   b1,1) Vacuum or open-enclosed, uniform-composite solid, liquid, gas and plasma.
   b1,2) A bound, stationary device like a conveying belt, cable, signal emitter or gun.
   b1,3) An independently moving carrier like an animal, man, van, train, plane or rocket.
4b2) Surroundings of a carrier can be vacuum, a material in any state and a force of any kind with specific conditions of eg light, wind, current, temperature, pressure, shear, height difference and barrier.
4b3) Performance measures are eg universality, efficiency, reliability and costs.

4c) Transmission
4c1) Transmission is by directed or non-directed conveyance, conduction, convection and radiation.
4c2) Data as sensory signal flow from source to encoder, emitter, channel, receiver, decoder to recipient.
4c3) Forces of transmission, utilized by humans, animals and technical devices are eg bio-mechanical, gravitational, mechanical, electro-magnetic, optical, chemical, bio-chemical, biological and genetic.
4c4) Encoding ranges from plain-encrypted artefact to spoken word to written text to technological signal.
4c5) Channels are eg an environmental medium, tube, cable and mechanical carrier.
4c6) Losses can be by friction, absorption, reflection, dispersion, dissipation, leakage and interference.
4c7) Performance measures are eg universality, practicality, flexibility, reliability, consistency, required infra-structure, energy consumption, volume, speed, costs and obstacle safety.

0 5   Subject

Subjective factors, expressed as epistemological intent, affect every single objective factor.
They are to be approached by cognition themselves and guide the steps on the ground before.
They draw out a double red line of subjective-objective factor specific standards of truth from questioning to publication to applications to possible risks.

5a) Onto- and phylogenetic development
Anatomical, physiological, psychological, mental capacities of individual organisms and populations have developed over geological time spans by evolutionary forces of mutation, adaptation, selection, growth and differentiation of specific functions within and between populations and environmental conditions.
5a1) The brain, central, enterally-peripherally extended nervous system, an organic, multi-dimensional, variable organ, empowers all mental functions. Its network of $\approx 10^{10}$ neurons generates as neurological codes physical, psychological, intellectual and spiritual objects on the level of conscious perception, re-collection, conception, intention, operation, conviction and application.
5a2) Consciousness is neuronal bio-chemo--electro-magnetic sensory awareness of a short term focused item and a long term present background screen, serving as a workbench for mental processing.

5b) Emotions
Emotions as atmosphere of being constitute a distinct conscious and unconscious psychic activity.
They arise out of stimulations and are generated at will in duration, intensity and expressive appearance.
They attach to in-external, own-foreign activities, ranging from being enslaved to independent initiative.
5b1) Sensations and moods arise with individual-collective needs as basic emotions like desire-satisfaction, joy-fear, elation-depression, happiness-anger, friendliness-gruff and stress-relaxation.
5b2) Passions and sentiments arise with individual-collective psychic, social, mental needs as love, hate, self-esteem, shame, interest, disinterest, affection, repulsion, ambition and aversion.
5b3) Compassions arise with individual-collective spiritual drives with awareness of right and wrong, good and evil towards self-emancipation, -realization and responsibility for a common benefit.
5b4) Positive-negative object specific standards of truth are eg attention-deflection, attraction-rejection, sensitivity-insensitivity and highlighting-toning down.

5c) Way of life
Repetitive activities, the largest part of study, work and social practices, are a locomotive engine to move large loads in realization of private and collective endeavors.
5c1) They stream out of directed, corrected and redirected actions into a course of habitual behavior.
5c2) They are tied into a multitude of politically embedded, autopoiesic macro frameworks of local to global, open to hidden, soft to forcing, minor to dominant relations.
5c3) Positive object specific standards of truth are eg altruism, impartiality and diligence.

5d) The senses
A sense is a physiological capacity of an organ to record with receptor cells a specific stimulus.
Body internal receptors record movement, balance, pressure, temperature and pain.
Body external stimulation through seeing, hearing, smelling, tasting or touching is the first, immediate, non-alternate source of cognition of objects for reflexive or mediated response.
5d1) Stimulations are filtered for items of interest, others are left below a threshold of consciousness.
5d2) Attention span can be short to long term, low to highly selective and automatic by training.
5d3) The stimulation is neurologically encoded into a dynamic bio-electro-chemical action potential.
5d4) It is passed on by the visual, auditory, olfactory, gustatory or somatosensory-kinesthetic cortices to the brain lobes for acute experienced sensual-mental perception.
5d5) It is transformed into a present, conscious, constructed, representative image in mental conception.
5d6) Interpreted into a conception are often eg simplicity, pattern, coherence and common features.
5d7) Codetermining impulses come from eg questions, motivation, experience, context and environment.
5d8) Instrumental detectors extend the range of observation from the meso- to the macro-micro-cosmos.
5d9) Performance measures are eg receptive field, sensitivity, resolution, reaction time and reliability.

5e) Mental capabilities
The mind is the decision making organ of physical, psychic, mental and spiritual activities.
5e1) Mental capability and productivity vary over a life cycle with acquired schooling, training, experience, knowledge, ways of thought and changing environments.
    e1,1) Perception comprises all activities by internal and external senses.
    e1,2) Inner processing products for subject true treatment are cognition, intention, conception, memory, mental operations, reflection, combined intention-conception and a design of expression.
    e1,3) Outer processing products for object true treatment are cognition of the object, approach by its class and realization by communication and action towards the desired result.
5e2) Mental capabilities allow with the tools of cognition universal treatment of objects of any class and category with their properties, dimensions, realities, aspects and conceivable risks.

5f) Experience
Experience registers subjectively all personal and surrounding activities of life.
5f1) It is acquired in the modes of eg active-passive, pre-reviewing, one time-continuously tracking, short-long term, accidental-preplanned, autodidactic-institutionalized and sensual-instrumental.
5f2) It is intensified by eg own questions, searches, deliberations, discussions, hands on experiences, failures, restarts and successes to be reflected on, ascertained and become reliable.
5f3) It is collected in memory as sensual-empirical data with eg semiotic-semantic values, causes, mechanisms, effects, environments, singularities, generalities and expectations.
5f4) It is expanded by documental and fictional narrations of other people.
5f5) It is collated with knowledge and visions about human-social objects to acquire maturity and let them become reconstructable and understandable.
5f6) It is collated with knowledge and visions about natural objects to acquire reason and let them become reconstructable and explainable.
5f7) Positively promoting cognition are eg proven remedy, analogy, intuition and educated guess.

5g) Self-understanding
Man is centered in his convictions. Life is carried by esprit.
Preconditions are individual and collective autonomy of body and mind and cultural competence.
Telos of mind points beyond instincts to replace anthropological by conviction based behavior patterns.
It springs out of faith with a set of religious statements or out of a human concept about life to outline intentions and conceptions in relation to man, society, nature and the infinite. It entails
5g1) Sub-concepts of
    g1,1) Personal and collective goals.
    g1,2) Emancipation with self-preservation, -interpretation, -determination and -realization.
    g1,3) Responsibilities for the betterment of man and environment with priorities, values, tasks and sound results through enlightenment by language, public discussions, regulations and supervision.
5g2) A concrete project with its specific steps to realize an envisioned goal.
5g3) Balanced contribution of life without
    g3,1) Predominating spiritual dogma.
    g3,2) Predominating scientist ideology.
    g3,3) Predominating human aggrandizements.
5g4) Balanced contribution to knowledge with
    g4,1) Objective, confirmable information about human, natural and spiritual objects.
    g4,2) Object and framework standards.
    g4,3) Elimination of inhibiting factors, defying cognition.
5g5) Increases in comprehension with
    g5,1) Expanded limits of the thinkable, calculable, do- and usable.
    g5,2) Expanded boundaries of man versus man made and natural living environments.
    g5,3) Long term emancipation in cosmic dimensions.

<u>5h)</u> History of cognition
History of cognition investigates, records and evaluates cognitive efforts over millennia in all fields of life.
Cognitive achievements and failures are seen against possible and actual results.
They are depicted as representative historical epochs with their predominant political-social forces.
They comprise ethos, approaches, paradigms, activities, events, aspects, concepts, speculations, world views, philosophies, dogmas, ideologies, investments, methods, applications, risks, discussions, acquisition and management of knowledge.
Major fields of cognitive activities are:
5h1) Basic, scientific, long term research in all disciplines, fueled out of theoretical questions, strives for description, understanding and explanation of fundamental principles of phenomena with generalities, predictability, applicability and enhanced capabilities.
5h2) General, scientific, medium term research in all disciplines, fueled out of the present agenda of theoretical-practical tasks, strives for their in depth knowledge and widened perspectives as a contribution to specific questions of common interest.
5h3) Applied, scientific, medium term research, fueled out of political-military-scientific-commercial-social interests and profits, strives for goal defined knowledge, skills and development of technologies, organizational structures, processes and competitive, marketable, patented products and services.
5h4) Object specific standard of truth is representativeness of record and actual affairs.
   h4,1) Possible cognition adds to the canon of knowledge, what search and investments enable to.
   h4,2) Achievements increase the human radius of the thinkable, calculable, do- and usable.
   h4,3) Failures do not recognize hidden facts that could be seen and open facts that can be seen.

<u>5i)</u> Schools of thought
Schools of thought have bundled epistemic efforts since antique scholarship. Their various scientific, contemplative and aesthetic studies have unfolded a variety of contributions to knowledge and life, eg
5i1) Jewish and Christian scriptures call repetitively for cognition and the standards of truth:
'Your word is a lamp for my feet, a light on my path.' (Ps 119,105)
'I am the way and the truth and the life. No one comes to the Father except through me.' (John 14,6)
5i2) Logic is accountability of identity. It derives from two basis statements through material and formal reasoning along a relationship and a standard of comparison a follow up statement, a conclusion.
5i3) Ontology describes deductively being qua being its realities, meanings, categories and modes.
5i4) Idealism claims reality of objects to be mentally constructed and not mind independent.
5i5) A priori reasons claim not to come out of experience, but out of immediate, necessary insight.
5i6) Realism claims reality of objects to be scientifically approximable and independent of thought.
5i7) Empiricism deduces all knowledge from self-verifiable sense-experience.
5i8) Positivism deduces all information from sensory experience, logical and mathematical treatment.
5i9) Materialism deduces all natural and mental phenomena from matter/energy and its interactions.
5i10) Pragmatism demands practical, applicable functionality in addition to theoretical accuracy.
5i11) Existentialism describes the primarily important in- and outward existence of a free, self-responsible feeling, thinking and acting human individual in an inauthentic environment.
5i12) Historicism embeds scientific theories into relative, dynamic contexts of place, time and culture.
5i13) Phenomenology reduces deceptions of observable appearances to self-reflective descriptions.
5i14) Analytical philosophy employs non-speculative, critical, logical, linguistic analyses.
5i15) Critical theory investigates mechanisms of power, misusing eg reason, science and technology.
5i16) Post-structuralism complements traditional theories with a plurality of heterogeneous perspectives.

<u>5j)</u> Present day trends
Interests, sources and applications of cognition have expanded into a multifarious spectrum as all political-social endeavors require R&D investments for improved performance, modernization and innovation.
5j1) Professional fields are expanding, differentiating, specializing. Growth of knowledge is exponential.
5j2) Information has become a production factor aside of capital, natural resources and labor.
5j3) The sciences have generated a functionally intertwining technological civilization.
5j4) Global political-economic-social players exploit human and natural resources, often with irreparable damages, in an environment of worldwide conflicts and enforce their interests in image fascism.
5j5) Object specific standard of truth is rejection of special interests of cognition and applications.

5k) Institutional factors
Private, public non-government and government institutions can promote, push and channel R&D in all fields of life at any stage according to their philosophy of research and desired objectives.
5k1) Scope of sponsorship ranges from a single project, professional field, application, development of human and natural resources, social structures and process, population group to the environment.
5k2) Scale can expand into institutionalized, systematic, population wide, educationally trained, generations running efforts.
5k3) Means are eg political, legal, financial, commercial, technical, medial and by man power.
5k4) Object specific standard of truth is promotion of a benefit within the general interest.

5l) Codetermining factors
Codetermining factors are spiritual, natural and social environmental states, changes and boundaries.
They are long term in- and external variables of individual and collective lives.
As social heritage, as result of past and present trend setting social forces, they coin the spiritual-political-military-legal-economic-social character of our times.
Legally they are treated as a non-contractual framework with favorable and restrictive conditions.
5l1) Environments comprise the natural environment and in society the spiritual, mental, mentality, artistic, political, judiciary, legal, corruptive, economic, social, vitality, human infra-structure, human-material infra-structure and media states and their interactions.
5l2) Changes are caused by eg new emerging motivations and trends in long term goal attainment.
Avant-gardes exist in all professional fields and as new social movements.
5l3) Boundaries are man's limits of spiritual, mental and physical capabilities.
5l4) Class boundaries are sound theology towards God, reason towards nature, ethics towards socie-
5l5) Framework specific standards of truth are the freedoms of truth, reason and maturity.
They require as a social construction the freedoms of eg privacy, thought, movement, residency, speech, assembly, profession, the arts and the press.

5m) Ethics
Ethics solve historic cases of gross criminal corruption with disastrous consequence.
The majority of man and society strives for advantages, predominance and elimination of opposition.
They employ any means conceivable to fall in their criminal capacity indefinitely low, if not arrested.
Ethics relies first on cognition to recognize the real state of affairs with failures and required remedies.
5m1) Intent is to preserve ethical freedom, where not an inhibiting factor runs to its self-destructive end.
5m2) Scaled up intent is moral utopia: spiritual, human and natural awareness, where public comprehension is able to discern, describe, evaluate and act for the long term survival of man and society.
5m3) It is trained on issues with universal principals of dignity, life and truth.
5m4) It educates the population towards a healthy conscience about true and false, right and wrong.
5m5) It educates the population with spiritual, human, mental horizons of knowledge and an overall comprehension with a personal responsibility, enlightenment and beneficial results.
   m5,1) A responsibility is chosen as a concrete contribution to life.
   Collective, global responsibility probes by case populations for emerging inhibiting factors and by general oversight present social forces for misuses of power and misdevelopments.
   m5,2) Enlightenment are the means of realization with the tools of language, task, value, regulation and supervision. They are promoted in public with humility, fearlessness, courage and perseverance.
   They overcome with spiritual-political determination any hostile, inhibiting factor.
   They mobilizes human esprit to pool the necessary resources for prevention and roll back of damages.

5n) Inhibiting factors
Inhibiting factors introduce man made barriers by causes of error and intent.
Most inhibiting factors affect cognition from negation to pretension of facts, concepts and ethos.
5n1) Errors are deficiencies in intellect.
 n1,1) They are caused by eg thoughtlessness, non-knowledge, mistake and irrationality.
 n1,2) Primitive aggrandizements are eg world, fate, fame, glory, beauty. happiness and sex appeal.
 n1,3) Pseudo-mental products, lacking sound theology, reason, maturity or ethics, are eg myth, idol, superstition, illusion, dogmatism, ideology, construal, social programming and secret policy goal.
 n1,4)) Pseudo-logical reasonings are eg tautology, pleonasm, circular reasoning, regress ad infinitum.
 n1,5)) They spread by eg culture, teaching, ways of thought and political-social instrumentalization.
5n2) Intentional barriers are defects in drives, mentality, intellectuality and spirituality, originating out of criminal inclinations, hate of man and archaic notions of prestige, power, possessions and pleasure.
They strive to bleed dry with kraken like suction cups any object still tangible.
They defile human dignity and universal human, social, natural and spiritual values.
 n2,1) Targets of gain are mostly self-image, language, frame works and physical objects.
 n2,2) Targets of loss are mostly the natural environment, another person's social-professional surroundings, his property and he himself.
 n2,3) Targets of elimination are first whistle blowers and political-social opponents.
 n2,4) Means are acquiescence, subversion, corruption, deception and violence in combinations.
  n2,4,1) Acquiescence yields to political-social pressure as way of least resistance.
  n2,4,2) Subversion mentally disrespects the gist of an objective standard.
  n2,4,3) Corruption physically violates an objective standard.
  n2,4,4) Deception manipulates perceptions, understandings, explanations, intentions and actions:
  ▫ Motivation control, eg stirring up of lower fears and desires leads to eg brutality.
  ▫ Justification control, eg propaganda for a political system leads to eg ideology.
  ▫ Knowledge control, eg privileged information of a cycle of decision makers leads to eg oligarchy.
  ▫ Public opinion control, eg manipulation of content, context, style and image by eg appeasement, diffusion, deflection, distortion, misinformation, misinterpretation, misevaluation, addition, elimination, exaggeration, alienation, perversion, defilement, ridicule, entertainment, glorification, mystification and instrumentalization leads large scale to social reality control.
  n2,4,5) Self-deception is rectified by cosmological insults: man is not center of the universe, not out of divine creation, not driven alone by reason and vulnerable to minute traces of toxins.
  n2,4,6) Violence impairs a spiritual, natural, man made object or human being by degrading abuse, attack by a military tool designed to do damage and misuse by a civilian tool designed to amend.
  A society with a multitude of social-administrative-technical inter-relations is extremely vulnerable to 'soft' channels of private and public coercion, curtailing inner and outer freedoms of movement.
  ▫ Damage of a man made object is by eg tempering, misapplication and destruction.
  ▫ Damage of a political-social-professional framework is by eg harassment, infringement of ownership, disenfranchisement, exploitation, subjugation, strangulation, enslavement and expulsion.
  ▫ Degrading abuses are eg insult, surveillance, defamation and demonization.
  ▫ Impairment can be eg physical injury, disease, altered growth and differentiation of a physiological trait and change in the level of a genetic-physiological capacity.
  ▫ Transformation can be into a cyborg - chimera with programmable augmented capabilities.
  ▫ Replacement can be by a programmable robotized android.
  ▫ Torture and murder.
 n2,5) Degrees can escalate in
  n2,5,1) Place from a spot to a nation to the globe.
  n2,5,2) Time from a point to a decade to an area.
  n2,5,3) Organization from an individual to a criminal cartel to a fascist system.
  n2,5,4) Technology from bio-mechanical action to weapon of mass destruction.
  n2,5,5) Severity from practical joke to manipulation to impairment to bestiality.
 n2,6) Combination of deception and violence out of archaic notion of
  n2,6,1) Prestige leads to image fascism.
  n2,6,2) Power leads to system fascism.
  n2,6,3) Possessions leads to order fascism.
  n2,6,4) Pleasure leads to hedonism.
  n2,6,5) Systematic political-social fascism leads to global hegemonic policies.

0 6 Summary

Access to all objects is by cognition.
It is the necessary starting point of successful human endeavors.
It adopts an unbiased position to initiate the process of questioning, searching, seeing, thinking and acting to be able to treat human, natural and spiritual objects according to their true properties.

6a) Achievements
Antique scholarship to modern research have taken a scientific approach to cognition.
- Over the last half millennium, political-social efforts have promoted institutionally, systematically, competitively, generations running public education, research, development and applications.
- Huge advances have been made in the natural sciences, logic, mathematics, technologies with expansion of the radius of action and generation of power and wealth. Today, there is not a political-military-economic-social endeavor that is not based on research efforts.

6b) Failures
6b1) Non-address of major issues
Hardly one public institution addresses the zeitgeist issues in substance, leading to depravation of esprit.
- Pseudo-mental products like illusions of human capabilities-conveniences and social programming.
- Power as the most devastating archaic notion, narrow, vile, hateful, persistent and scheming instrumentalizing values, constitutional structures and processes towards their self-destructive end.
- Man himself, his intentions, conceptions, convictions, values, responsibilities and expressions with their consequences. He is largely a brutal creature, applying any means for his advancement.
- Man's position in society. He cannot effectively handle conflict solving between hostile parties.
  He does not know how to overcome inhibiting factors by enlightenment.
- Man's position against nature and God. He does not project himself into the future, combining a spiritual hope with a real prospect in cosmic dimensions.

6b2) Hegemonic policies
Most public institutions have forged alliances with global players for exploitation of man and nature.
- Continuing are famines, epidemics, inequities of life essentials, overpopulation, environmental destruction, leading as mass effective misdevelopments to planetary catastrophes.
- Continuing are exploitation, polarization of resources and wealth, human rights violations, leading as mass effective power tools to refugee streams, terrorism, mass murder, civil strife, war and collapse of political-social systems.
- Threatened is a 'human hand directed evolution' to transform man into a cloned cyborg-chimera with augmented capabilities by programmable electro-magnetic-mechano-bio-chemical-genetic means.
- A large number of public institutions participates in a global, clandestine, dirty B-C-R-G-N war between government and private defence leagues' security services of the 1st, 2nd and 3rd Worlds and their populations. Together they operate a global system of labor camps for electro-magnetic-bio-chem-genetic programming of social-psychological-physiological profiles and elimination of dissident, hostile and moral voices.

6c) Public Accusations
The major church and secular political-scientific-social leaders are in image fascism in hundreds of millions of cases a year worldwide by universal standards accused of environmental violations, deception, exploitation, subjugation, degradation, physical injury and murder.

6d) Self-extinction
The major church and secular political-scientific-social leaders do not heed the historic warnings of colonialism, two world wars and genocide, today as escalating gross corruptions with modern technologies of mass destruction to lead inevitably to planetary catastrophes, collapse of political-social systems and self-extinction of mankind.