0   Cognition

Approach to all objects is by cognition.

Udo Frentzen 2016/21

0 1   Remarks

Intent of the essay is to give a condensed 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 subject, the object and a relation between them.
Its first standard truth applies universally throughout fact finding and cosmic dimensions.

1b) Approach
Approach to all objects is by cognition, by observation and contemplation of facts.
They are to be exhausted in their dimensions, realities, forces, properties, classes, categories and con-
sequences to cover comprehensively singular and ordered, present and emerging aspects.
Present day knowledge is totally insufficient for extended interpretation, construal and speculation.
Man sets out to explore an ocean and beyond where he can discern so far not more than a single drop.
Cognition is a daily and a basic individual-collective long term running challenge.
'Cognosce te ipsum' points at the key: the observer's position. What are his questions - his tools?
1b1) Starting points are questions and searches. Basics are
Who is man? What is nature? Who is God? Which is the best way to proceed?
1b2) The questioned item is placed into the center of scientific, contemplative, aesthetic research.
Every object entails at least a generative and applicative factor with its acting force.
Every object entails at least a subjective, relational and objective factor with its properties.
Every object entails at least a natural, human and ethical dimension with its standards.
Every object is subject to investigation, addition, deletion and correction.
1b3) Searched is intrudingly and pryingly to find a starting point for the tools of cognition.
1b4) The initial steps of question, focus and observation are the first bottlenecks and have to be studied
and practiced in all human activities. They are the first existential factors of human endeavors.
All subsequent steps of mental and technical processing rely on it for an objective result.
1b5) Cognitive factors are to be approached by cognition themselves.
Causal chains can run from questioning to consequences to finally show at the last stage fall back effects
on cognition itself and the essentials of mater and life, where errors have multiplied from fact finding to
teaching to application into gross inhibiting factors.

1c) Subjective factors
Subjective factors determine in first place the observer's position.
Driving motor of all steps of cognition is its intent.
1c1) Main intent is to shed light on an object and to look further for a more accurate description.
It includes the tools of visualization from perception to conception to mental horizon to vision.
1c2) Scaled up intent is ethical awareness in telos of mind with correction of inhibiting factors.

1d) Relational factors
A relation allows access of a physiological sensor to an object in focus.

1e) Objective factors
1e1) Main intent is to achieve a description of the item at hand with its properties and forces.
1e2) Scaled up epistemic research goal is universal treatment of all objects.
1e3) The pragmatic status can be object surpassing, adequate, lacking or inhibited.
1e4) The theoretical status is open ended. There is no definite, cognition exhausted object.
1e5) 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.

0 2   Standards

Standards entail mostly definition, purpose, scope, generation, classification, scale and application.

2a) Definition

Man's standard, a self-set and self-interpreting value, is human dignity.

2b) Intent

2b1) Intent is to protect man, society and environment that human actions in freedom of choice with positive and negative consequences do not to fall back on themselves, but further objective benefits.

2b2) Scaled up intent is to further telos of mind with sound mental concepts in ethical freedom.

2c) Scope

They apply to all subjective-objective, individual-collective, spiritual-human-natural objects in space-time. There is not one object with at least one spiritual and human and natural aspect.

2d) Generation

Human dignity and deduced values are generated by designation of goods as being worth of protection.

2e) Classification

2e1) Spiritual values protect divine gifts to man.

2e2) Existential values protect basic human rights to life.

2e3) Humanitarian values protect basic personal rights to growth.

2e4) Environmental values protect basic rights of nature.

2e5) Cosmic values contribute to life, truth, unity and environment for the long term future of man.

2e6) Universal values apply to all objects on the globe in past, present and future.

2e7) Framework values combine all proper values of a social fabric.

2e8) Object values combine all proper values of a single object.

2f) Scale

Values are ordered hierarchically according to significance and range of validity and connected by an unbroken interlinked tree structure. There are no values, which cannot be deduced from human dignity.

2f1) Primary values

   f1,1) Primary spiritual, existential, humanitarian and universal 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). It extends equally to all disregarding origin, race, color, gender, age, position, wealth, culture and faith.

   f1,2) Primary to fourth values in a constitutional framework are often codified as basic human rights.

   f1,3) Primary universal natural value is integrity of nature.

2f2) Secondary spiritual, humanitarian, universal and natural value is truth. It abhors deception.

It extends to all objects in reach of self-awareness, curiosity, imagination and ambition.

   f2,1) Truth is found by cognition, first by an intruding, observing, questioning, investigating search, exhausting available means to generate knowledge.

   f2,2) 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.

   f2,3) Truth in its narrow context means congruence of an objective description with its object in one to one accuracy from property to term to sign to communication to documentation.

   f2,4) Truth in its wider context means an accurate, complete, transparent. objective description of an object within the dimensions of man's radius of action and responsibilities.

   f2,5) Truth in its cosmic context means an accurate, scaled up, objective description of an object within the dimensions of nature and the infinite.

   f2,6) Truth in a social framework means freedom of knowledge from generation to application.

2f3) Tertiary, existential, humanitarian, universal and primary social value is unity of mankind.

It abhors segregation. It is based on equity and justice with the rule of law.

2f4) Fourth humanitarian and universal values are freedoms, emancipation and common welfare.

2f5) Professional standards are guidelines of state of the art field knowledge and praxis.

2f6) Item specific standards are benchmarks of properties and performance.

2g) Realization

Realization is by design, feedback, public discussion, regulation, supervision and litigation.

Design entails proper selection, combination and conflict solving of standards.

0 3   Subject

Subjective factors of cognition are based on the components on man.
They are outlined in the essay III A Man.
Subjective factors guide along their set intent the steps of the objective factors.
Cognition cannot do without any one of the subjective factors, applied in sequence and parallel, singular and in combination, concentrated on a point and in overall perspective.
Preconditions
◦ Physiological preconditions are autonomy of body and mind with an alert consciousness.
◦ Framework preconditions are guaranties of safety, freedoms of movement, thought, speech, assembly, profession, the press, the arts, religion and access to education.
◦ Cultural preconditions are schooling, training and public awareness to acquire competence in language, logic, mathematics, method and data processing.
◦ Preforms remain on the stage of infantilism, primitivism, naivety, cliché, impulse and blind imitation.

3a) Constitution
The constitution comprises physical growth, needs and drives, motivations, the senses, memory, emotions, psychic activities, mental activities and anthropological factors.
Physiological capabilities endow cognition with functionality, coordination and applicability.
They take up sensory signals from within and outside the body to register a perception, visualize it in consciousness and pass it on to further processing as a singular mental object.
Technical devices extend the range of perception from the meso- to the micro-macro-cosmos.
Digital data processing allows processing in multi media world wide in real time.
Digital data bank allow in-output and storage of trillions of calculations/sec in global networks.
Performance measures are eg receptive field, sensitivity, resolution, reaction time and reliability.
Today, threatened is a 'human hand directed, accelerated evolution' by electro-magnetic-mechanical-bio-chemical-genetic means to develop cloneable cyborg-chimeras with special programmable, augmented capabilities according to orders.

3b) Construction
Construction comprises intention, conception, mental operations, question, search, experience, cognition, comprehension, reflection, design of expression, expression, communication, action, administrative organization and technical device.
The mind
The mind is the conscious internal processing, decision making and external executive organ of sensual, psychic, physical, mental and spiritual activities. It has generated all man made phenomena.
It forms out
◦ Inner subjective tools of processing: intention, conception, mental operations, question, search, experience, cognition, comprehension, reflection and design of expression.
◦ Outer objective tools of expression: communication, action, administrative organization and technical device.
  The inner and outer tools are tailored to be in close tough with subjective and objective realities to enable pragmatic goal attainment, determined, functional, productive, adequate, coherent and balanced.
It follows in line
◦ Concrete starting points of question, search and the tools of cognition.
◦ Construction rules of subject and object true treatment.
◦ Expansion rules to explore with development new horizons.
◦ Aspirational convictions.
It increases with applications the radius of action with beneficial and destructive capabilities,
◦ Generating knowledge about facts with sound mental concepts like faith, reason and maturity.
◦ Generating knowledge about depraved power tools with pseudo mental products like ideology.

3b1) Intention

Intention is the conscious cause setting force of expressions by communication and action.

It builds on perception by internal and external senses.

It initiates, guides and terminates psychic-emotional-mental activities with their visualized objects for re-alization of an object of choice.

It refuses to be penetrated by other chains of causality.

b1,1) Construction rules
- As a visualizing tool it aligns itself from a point of perspective via a relation towards an object.
- As a pragmatic tool it considers along all steps possibilities and limitations.
- As a quality concerned tool it employs the principles of subject and object true treatment.

b1,2) Characteristics

Its most outstanding characteristic is its range of interest, attaching itself to any object over any time-span, re-invigorating itself persistently to explore new horizons with a variety of desirables.
- Preforms are reflex, bare need, blind impulse and compulsory action.
- Trains of intention run from internal physiological-motivational-emotional-psychic-mental-spiritual stimulus to a conscious intent, conception, mental operation, question, search, experience, cognition, comprehension, reflection, design of expression, decision and from there externally to direction of tactical-strategical steps of realization by communication, action, administrative organization, technical device.
- Scope of intention entails all in- and external factors in their dimensions from psychic processing to results with further consequences.

b1,3) Cognitive intent

Driving motor of all steps of cognition is its intent.
- Main intent is to shed light on an object and to look further for a more accurate description.
- Scaled up intent is ethical awareness in telos of mind with correction of inhibiting factors.
- Pragmatic research goal is realization of a specific envisioned project.
- Intellectual research goals are expansion of man's horizons and radius of action.
- Epistemic research goals are expansion of knowledge and avoidance of errors.
- Scaled up epistemic research goal is universal treatment of all objects.
  It allows with management of knowledge and public contributions treatment of objects of any class in all applications, contexts, environments on all levels of abstraction and complexity.
- Political-social research goal is to embed enlightenment into public participation.
- Spiritual intent is increase in overall comprehension of human endeavors with values, priorities, re-sponsibilities, tasks, means and results to gain responsible treatment of all factors of matter and life.

b1,4) Every point of its train is subject to reflection, evaluation and re-direction.

b1,5) Stored in memory are observed, studied, experienced models of goal attainment for reference.

It blends with collective motivations and intentions to participate in larger generations running efforts.

b1,6) Vulnerability exists especially to narrow, lacking, habitually trodden cycles.

b1,7) Excess is eg overestimation, overshooting one's capabilities.

b1,8) Inhibiting factor is eg megalomania, transgressing natural, human, social and ethical standards.

3b2) Conception

Conception constructs an image of an object as a mental representation in consciousness.

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.

A conception serves mental activities in all stages from internal, subjective processing to external, objective expressions to visualize objects of choice.

All conceptions entail psychic-emotional-mental activities and are closely guided by intentions.

Main goal is to mold an object of choice according to present intent.

Scaled up goal is to participate in the collection of a canon of knowledge, to avoid inhibiting factors and to generate mental-ethical awareness with spiritual, natural, human, historic horizons.

Its limits of realization delineate the radius of human actions and responsibilities in cosmic space-time.

b2,1) Construction rules
- As a visualizing tool it aligns point of perspective, relation and object.
- As a pragmatic tool, it visualizes the object distinctively and accurately.
- As a quality concerned tool it employs the principles of subject and object true treatment.
- Expansion of a mental horizon is as in search and development by tiny repetitive steps.

b2,2) Characteristics

Its most outstanding characteristic is its range of interest, constructing any object conceivable from reduction to a void, exploration of unchartered areas to spinning off new creations with a life of their own.
- Preforms are shadowy silhouette, patch, hunch and suspicion.
- The specified, identified content stands at the center of mental operations.
- It is drawn out of psychic activities by awareness, of the senses by cognition, of memory by recollection, of creativity by imagination and of reflection by turning it over.
- It is visualized as an image, map, pattern or symbol.
- It is adjusted in focus with distance, angle, surrounding medium and place-time frame.
- It attaches to the image a term with a phonetic signal and a written sign.
- It endows the image with meaning, its forces, characteristics and relations.
- It allows the image movement, flexibility, moldability and transparency.
- It is carried with its modifications through all stages of processing and realization.

b2,3) Cognitive conception
- Main function is to shed light on an object and to look further for a more accurate description.
- Scaled up function is ethical awareness in telos of mind with correction of inhibiting factors.
- Pragmatic function is to render a concise, accurate, objective description.
- Intellectual function is to enable mental operations, reflection, design of expression and expression.
- Epistemic function is classification, categorization and sub-categorization of objects to gain a complete list of properties in their dimensions from perception to application to consequences.
- Political-social function is to pass on objective information to the general public.
- Spiritual function is increase in overall comprehension of human endeavors with values, priorities, responsibilities, tasks, means, results to gain responsible treatment of all factors of matter and life.

b2,4) Every point of an image is subject to reflection, evaluation and re-construction.

b2,5) A single image stands in a single contextual frame, - not in a house of a thousand mirrors.

b2,6) Vulnerability exists especially to narrow, habitual segmentation of focus against overall reality.

b2,7) Excesses are eg world views, overestimating present knowledge against cosmic dimensions and ossifications, protecting themselves against revision and expansion.

b2,8) Inhibiting factor is eg lack of transparency to block truth tracking.

3b3) Mental operations

Mental operations process an object in visualization, guided by intentions along the required qualitative and quantitative steps to reach a conclusion.

They draw on sensations from the entire neuronal network and let the object undergo in free arrangement and complete interlinkage a series of transformations.

b3,1) The object is first fixed in consciousness and placed into a contextual frame with the author's position, operational intent, assumptions, definitions, conditions and searched for result.

Contextual frames are in general the natural, human-social and spiritual dimensions with their standards, a set of items, lines of forces, properties, relations, conditions, operational rules and ranges of validity.

They are designed to align items, relations and conclusions consistently by eg place + time, quality + quantity, modality + possibilities, part + whole, cause + effect, purpose + result, relevant + irrelevant.

b3,2) The items comprise mainly semantic content, linguistic term and semiotic symbol.

b3,3) Psychic operations are mostly association, alignment, probing and dissociation.

b3,4) Mental operations are mostly addition, subtraction, substitution, deletion, rearrangement, comparison and conclusion.

Mathematical operations are mostly logical and arithmetic like algebraic-geometric calculations.

b3,5) Operations proceed mostly in sequence and parallel along tree and cycle charts.

b3,6) Contextual frames can be expanded to handle longer interconnected, interdisciplinary tasks.

b3,7) Conclusions range from a sad truth to a hoped for result and are starting point for further operations.

3b4) Question

A question points at an object at hand.

b4,1) It is placed into the center of a search for more information.

b4,2) Basic questions are: Who is man? What is nature? Who is God?

What is life? What is death? Which is the best way to proceed?

b4,3) It gives with follow up questions a direction to a pursuing search.

A pointed question projects a 'laser beam' from an interrogation mark to an application.

b4,4) As the deciding starting point, philosophy can be called the art to ask questions.

3b5) Search

A search continues in the train of a question as an exploratory excursion.

b5,1) It aligns psychic, mental and expressive activities, repeatedly crossing back and forth subject - object realities with close interplay of their forces.

b5,2) Its primary standard is the standard of truth in its narrow, wider and cosmic context.

b5,3) Its rules are like that of expansion of a mental horizon and development by tiny repetitive steps.

b5,4) It takes a closer look across the panorama, the micro- and macroscales.

b5,5) It studies the subject matter from existing, available knowledge.

b5,6) Continuing its questions, it concentrates on a direction, field, method, means, place and time.

b5,7) It sets the starting point of the tools of cognition for scientific, contemplative, aesthetic research.

b5,8) Searched is intrudingly and pryingly, though restricted by ethical standards of acquisition.

b5,9) Its primary stepping stones are sound mental concepts of knowledge.

b5,10) The initial steps of question, search, focus and observation are the first bottlenecks and have to be studied in all human activities. All subsequent steps of mental-technical processing rely on them.

b5,11) Corruption is mostly by error, faulty concepts of knowledge and intent.

b5,11,1) Habitual deficiencies lead to permanent loss of eg accuracy, functionality, range, structures and processes with a black out of proper perception, comprehension, evaluation and action.

b5,11,2) Corruption multiplies along publication to teaching to applications into gross inhibiting factors.

3b6) Experience
Experience registers subjectively all personal and surrounding activities of life.

b6,1) It is acquired in the modes of eg active-passive, pre-reviewing, snapshot-continuously, short-long term, accidental-preplanned, autodidactic-institutional and sensual-instrumental.

b6,2) It is intensified by eg own questions, searches, deliberations, discussions, hands on experiences, failures, restarts and successes to be reflected on, squashed, modified or ascertained.

b6,3) It is collected in memory as sensual-empirical data with eg semiotic-semantic values, causes, mechanisms, effects, environments, singularities, generalities and expectations.

b6,4) It is expanded by documental and fictional narrations of other people.

b6,5) It is collated with knowledge and visions about human-social-natural-spiritual objects and issues.

b6,6) It promotes cognition by eg proven remedy, analogy, intuition and educated guess.

3b7) Comprehension
Comprehension is a multistep process from awareness to a valid evaluation of an object. Formed out are
◦ Perception, reconstruction and visualization.
◦ Identification, description, classification and categorization with conceptualization.
◦ Acceptance in sound theology, explanation in reason and understanding in maturity.
◦ Interpretation, application and evaluation.

b7,1) Conceptualization
Scientific concepts are as tools of cognition ordered data platforms of object's properties, forces and relations with their cognitive aspects for more detailed investigations.
  ◦ Knowledge comprises data generation, arrangement, management, assessment, standards and responsibilities with supervision.
  ◦ Reason, maturity and sound theology comprise description, approach, data classification, categorization and treatment.

b7,2) Classification
Classification serves as a template for groups of items with major common properties to allow convenient one like all treatment, standardization and economization. All objects are

b2,1) Typified according to their primary semantic content.

b2,2) Listed in intention (content), extension (cases) and relations under the next higher genus.

b2,3) Become by art differences a part in an open, heterogenous taxonomic systems of all objects.

The classes and categories are
◦ Spiritual objects
Spiritual statements of revelation are expanded on by exegeses of His will.
Spiritual objects are grasped in faith in the divine dimensions of life, love, truth and justice.
Their result oriented priorities within sound theology are
◦◦ Non-violence
◦◦ Address of major issues
◦ Natural objects
Natural phenomena are described by the scientific method.
Natural objects are explained in reason in the physical dimensions of space-time.
Their categories, rejecting contradiction, are
◦◦ Quantity by unity, multitude and all.
◦◦ Quality by reality, negation and limitation.
◦◦ Relation by inherence and subsistence, cause and effect, interrelation between objects.
◦◦ Modality by possibility - impossibility, existence - non-existence and necessity - chance.
◦ Human-social objects
Human affairs are described by the real life method.
Human-social objects are understood in maturity in the dimensions of human activities.
Their categories, rejecting omission, are
◦◦ Content with natural, human and spiritual forces, properties and causal chains in space-time.
◦◦ Reality, eg spiritual, natural, human, mental, psychical, emotional, pragmatic or fantastic.
◦◦ Functions, states, structures, processes, paths, mechanisms, events and effects.
◦◦ Logical and mathematical space, preserving identity, consistency and non-contradiction.
◦◦ Presentation, eg, theme discussion, medium and event staging.
◦◦ Environments, eg situation, context, praxis, framework, heritage and tradition.
◦◦ Cosmic environment, eg rooms of movement, capabilities and boundaries.
◦◦ Inhibiting factors, eg non-knowledge, uncertainties, risks, dangers and possible damages.

b7,3) Standards of compatibility
Standards of compatibility are existential conditions of human actions and life.
They serve as class boundaries for proper treatment of objects from generation to application by sound theology towards God, by reason towards nature, by maturity towards man himself and by ethics towards society and cannot be transgressed without faulty results, failures, conflicts and possibly severe fall back effects on human existentials.

Human actions

↓   ↓   ↓   ↓

↓   ↓   ↓   ↓
Existentials or life
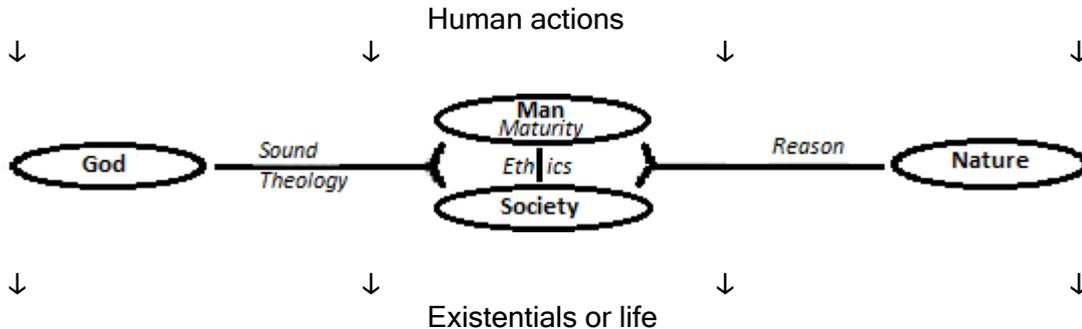
The standards will reduce in cosmic dimensions to responsible treatment of the innumerable factors of objects towards God, life and matter.
b7,4) Application
Application comprises object provision, function, impacts and environments.
They cross subject-object relations over the range of non-expression to expression.
Its basic components of subject, relation and object are arranged in line to be compatible, practical, economical and productive in goal attainment.
  b7,4,1) Subject true treatment
  In subject true treatment attention centers on the criteria of the subjective processing factors in their biotic medium of self-understanding to arrive at a workable design of expression with removal of gaps, friction and inhibiting factors.
  b7,4,2) Object true treatment
  In object true treatment attention centers on the criteria of the objective realization factors in a biotic medium of world-understanding to arrive at the desired result with surmounting of pitfalls, obstacles and inhibiting factors.
b7,5) Inhibiting factors
Pseudo mental products out of irrationalities, misuses of knowledge like special interests of cognition and destructive intent, claiming 'knowledge is power', violating the standards of compatibility and possibly life and matter, are eg egocentric happiness, aggrandizement, myth, idol, superstition, illusion, rigid dogma, ideology, pseudo-scientific concept, social profiling/programming and secret policy goal.

3b8) Reflection distrusts physiological-psychic-mental-spiritual activities, their results and consequences to recheck points in question. The tools of cognition are reapplied to the project, while
  b8,1) Taking a perspective from a step further back for an unprejudiced view.
  b8,2) Retrieving the steps of mental processing and implementation.
  b8,3) Challenging all factors with their states, processes, assumptions and conditions.
  b8,4) Recalculating the error analysis.
  b8,5) Searching for disregarded and additional factors.
  b8,6) Abstaining from dead end, self-crucifying contemplation.
Desired result is a more accurate, objective, complete, reliable, balanced and creative description.

3b9) Design of expression
A design of expression aligns a line of mental processing with a line of mental-physical implementation.
  b9,1) Processing comprises a complete line from intention to a mental draft of the envisioned object.
  Individual steps can be bundled as one intention-conception-operation units in sequence.
  b9,2) Implementation comprises a complete line from decision to a mental draft of the realized object.
  Individual steps can be bundled as one force-resource-action units in sequence.
  b9,3) Applied are the construction rules with pragmatic, envisioning, productive and quality aspects.
  b9,4) As blueprint, all steps are often redrawn and reworked to improve points in question.
Desired result is a functional natural-human-spiritual product with sought for properties.

<u>3c)</u> Expansion

Expansion comprises goals, rules, basic, physiological cognition, innovation, quality, institutional efforts, assisting efforts, collective efforts, interactions, vulnerabilities, excesses, inhibiting factors, pseudo developments, results, evaluation.

Realization capabilities endow cognition with an extended radius of action.

By research, innovative, creative and qualitative development and applications, it opens up beneficial and destructive possibilities in cosmic dimensions.

◦ It generates knowledge about facts with sound mental products like faith, reason and maturity.
◦ It generates knowledge about depraved power tolls with pseudo mental products like ideology.

3c1) Goals

Goal definition is by philosophy of research with its merits, political-social-scientific-technical-industrial-commercial character, prospects, scope, means, applications and public interactions.

Basic goal is universal treatment of all objects in their

◦ Objective, complete, balanced description of objects of any class and magnitude with their forces, properties and causal chains.
◦ Natural, human, social and spiritual dimensions.
◦ Levels of reality, abstraction and complexity.
◦ Applications, risks, dangers, results and consequences.
◦ Situation, context, environment in space-time of the micro-meso-macro cosmos.
◦ Possibly active inhibiting factors.
◦ Aspects contributed by all people in public discussions.

Scaled up goal is to fuse envisioned human spiritual, mental and material hopes.

3c2) Rules

Development builds on human constitution and construction, especially on physiological and framework preconditions and basic universal standards.

c2,1) It proceeds in tiny steps from questioning to realization via eg literature and field search, goal definition, research, forecasts, project design, feasibility study, decision, pooling of human-material-financial resources, test runs, provision of goods and services, marketing and feedback evaluation.

c2,2) It proceeds in the way of simple-complex, specific-general and concrete-abstract.

c2,3) It spreads from a country to a continent, the globe, the planetary system and the galaxy.

c2,4) It continuously supersedes present states of art by enlargements of comprehension and praxis.

c2,5) It incorporates concepts with superseding, generalizing and unifying principles.

c2,6) It abstains from absolute definitions of truths.

c2,7) It promotes the spirit of man and the integrity of nature.

c2,8) It continuously reapplies all single steps, starting from questioning and cognition in series.

3c3) Innovation

Innovation introduces new designs. It generates along the product road map from conception to market introduction successively improved versions and new, speculative, visionary objects, which did not exist before in construction of future living environments.

c3,1) It increases the number of existing objects and accelerates their turn over.

c3,2) It increases the number, differentiates and specializes the professional fields.

c3,3) Modernization promotes present state of the art technologies like mechanization, automatization and digitalization for gains in efficiency, productivity, competitiveness and growth.

c3,4) Rationalization cuts out waste. It eliminates non-required means of goal attainment.

c3,5) Urbanization sets up basic, practical administrative-technical infrastructures and services in centric and poly-centric urban areas to massively expand and attract neighbouring, rural populations.

c3,6) Industrialization with mass production in organized step by step processes promotes a scientific-industrial-technological-commercial civilization.

c3,7) Sciensfication promotes generations running, institutionalized scientific research and development, a mental resource, as a driving production factor aside of capital, labor and natural resources.

c3,8) Globalization promotes worldwide exchange of ideas, people, goods, services, money for economic growth by liberalized trade and fiscal policies, efficient transportation and communication.

c3,9) Cosmization carries technological applications of the professional fields throughout space.

c3,10) Fostered are illusions of continuing progress with increases in power and wealth without limits. Ideologized are claims to lower instincts of prestige, power, possessions and pleasure, disregarding violations of ethical standards of man, society and environment.

3c4) Quality
Quality adds performance and merit. It improves a technical benchmark for an application and designs an objective benefit into a mental-human-natural product by applying sound theology, reason, maturity and ethics within basic universal standards.
A human drive is transformed into an acceptable product without harm to man or environment.
3c5) Institutional efforts
Institutional efforts can promote research, development and applications. Private, public non-government and government institutions assist, sponsor, champion, channel home and foreign efforts in all fields of life at any stage according to their philosophy of research and political-social objectives.

c5,1) Means are eg political, legal, financial, commercial, technical, scientific and manpower support.

c5,2) Scope of sponsorship ranges from a single project, professional field, application, human and natural resource, social structure and process, population group to the natural environment.

c5,3) Scale can broaden into a social enterprise to expand human boundaries.

3c6) Co-determining factors
Co-determining factors are spiritual, social and natural environmental states, changes and boundaries.

c6,1) They result as social heritage out of past and present trend setting social forces and constitute co-determining, long term in- and external variables of individual and collective lives.

c6,2 They comprise as social character eg vitality, dynamics, mobility, mentality and their interactions.

c6,3) They can promote, tolerate and inhibit the material, human-spiritual infrastructure.

c6,4) They are treated in daily trading as a non-contractual framework conditions.

c6,5 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.
Changes are measured qualitatively and quantitatively by leading, coincident and lagging indicators.

c6,6) Boundaries are man's limits of spiritual, mental and physical capabilities.

3c7) Collective efforts
Collective developments pool population wide, generations running, organized, institutionalized, systematic research efforts to expand man's boundaries of spiritual, mental and physical capabilities.

c7,1) Spiritual limits
◦ The distance God - man is infinite, God being the creator of heaven and the earth.
◦ Theological teachings are advanced by spiritual forces through faith and sound theology.

c7,2) Mental limits
◦ Man is born in the common state of non-knowledge and over centuries acquired knowledge constitutes only a scrap versus the dimensions of the universe. His free phantasy exceeds factual knowledge by leagues, but rarely approaches common fundamentals or far out extremes.
◦ Mental states are improved by social forces through maturity, research and development.

c7,3) Natural limits
◦ Limits of action are set by possibilities of existing-known energy, matter, space and time.
Man can utilize and alter conditions, but he cannot create out of his own new physical forces.
◦ Natural conditions are improved by social forces through reason, research and development.

c7,4) Class boundaries as standards of compatibility, sound theology towards God, reason towards nature, maturity towards man and ethics towards society expand rooms of free movement.

<u>3d)</u> Essentials

Essentials comprise physiological base, freedom, history of cognition and conviction.

3d1) Physiological base

The physiological base builds on material and biological existentials within a habitable range.

The material existentials comprise mainly earth's distance from the center of the milky way and the sun; 3+ generations of burned out stars with the required chemical composition; mass and energy of the sun; mass, rotational stability, inclined rotational axis, magnetic field, water, atmosphere, temperature, plate tectonics, vulcanism of the earth.

The biological existentials require self-organization of matter, organic building blocks and the forces of evolution to form out a diversity of species and natural living environments with ecological systems.

d1,1) The cosmos

The cosmos is described by cosmogony, cosmology and eschatology.

◦ Cosmogony reconstructs through backward extrapolation the earliest physical conditions of the cosmos. From a singularity at a finite point in space-time about 14×10^9 years ago, a state of extreme density of radiation energy, approaching Planck's time h_t, it exploded, cooled and developed into the present geometry with a multitude of material formations.

◦ Cosmology

◦◦ The macro-cosmos is a coherently gravitation bound isotropic, homogeneous, accelerating inflationary Riemann geometry with asymptotic Minkowski properties towards infinite. It developed stable single and groups of galaxies, clusters, nebula, stars and planetary systems.

◦◦ The meso-cosmos constitutes the validity range of classical, non-relativistic physics.
Its phenomena of abiotic matter are described by physics, chemistry and their fields of study.

◦◦ The micro-cosmos enfolds according to the standard model out of 3 classes of elementary particles: point like spin ½ particles, field particles of the 4 forces and Higgs particles, endowing elementary, subatomic particles with mass. It is ruled predominantly by strong, weak and electro-magnetic forces, unified in a single theory. It is described by Quantum Mechanics, Electro-, Chromo- und Flavordynamics.

◦ Eschatology projects through forward extrapolation future physical conditions of the cosmos for the next 10^{27} years as a continuing, entropy gaining, spatial expansion, dispersion of matter and emission of radiation to leave black dwarfs, neutron stars and black holes.

d1,2) Natural environments

Natural environments are long term variables of in nature found energy, matter, flora and fauna.

◦ The Heliosphere, a star of medium size and luminosity, about 4.5×10^9 years old, generating by nuclear fusion electromagnetic radiation, a gravitational and geometrical center of nine orbiting planets, including Pluto, allows a long, stable developmental time span for evolution of organic life.

◦ The earth's magnetic field extends as magnetosphere asymmetrically ~ 6o ooo km sunwards and ~ 1 2oo ooo km away from it. Layered below are the plasmasphere and ionosphere.
It deflects together with the heliosphere cosmic ray from outside the solar system.
It deflects charged particle of the solar wind, which would erode the upper atmosphere with the ozone layer, which in turn shields against ultra-violet radiation.

◦ The Biosphere describes all single factors enclosed by the atmosphere.

◦◦ The atmosphere of the earth, reaching about 10 km upwards, consists out of 78% N_2, 21% O_2, 0,03% CO_2 and in its lower layers up to 4% of H_2O_{VAP}. It dampens by circulation temperature and pressure differences, carries precipitation inland and serves as a metabolic fuel.

◦◦ The hydrosphere of gas, ice and liquid, found to 99,7 % in the oceans, supplies with sweet water the largest component of plants and animals and is indispensable in their metabolism.

◦◦ The lithosphere, the outer, firm, plate layered mantle of the earth, reaching about 100 km deep, has as its crust the pedosphere with rocks, stones, sands and soils of various qualities.

◦◦ The biotic environment includes all living organisms in water, land and air.

◦◦ Ecology describes individual, populational, environmental abiotic-biotic forces, requirements and conditions of life with their multifaceted interdependencies in the development over geological time spans. A local ecological environment often forms out a self-organizing, semi-closed system with an energy and metabolic cycle along an ascending food chain in a labile dynamic balance.

d1,3) Taxonomy

The phylogenetic theory of descent serves as basis for description, denotation and categorization of all organisms. As a result of evolutionary processes, there exist in discontinuous variability today about 5oo ooo plant and 2 ooo ooo animal species. The taxonomic categories are rooted in four kingdoms (regnum, pl. regna) of one cell organisms, prokaryotes, eukaryotes and mushrooms.

3d2) Freedom

Freedom, man's ability of movement in natural, human, social and spiritual dimensions is a basic and universal requirement of human activities. Every movement in any environment requires freedom. It is a state for being, encompassing passively absence of intrusion and non-use, actively liberation, use, expansion and also transgression of boundaries, which backfires on itself.

d2,1) States

d2,1,1) Submission leads to physical enslavement, mental stupor and often extinction.

d2,1,2) Liberation from political barriers is won by awareness, will, resources and often conflict, - from mental barriers like idolatry, superstition, illusion by sound theology, reason and maturity.

d2,1,3) Use is by intentional restraint or actual expression with communication and action.

Common characteristics are eg essential or superfluous, major or minor, daily or scarcely, actual or potential, stable or fragile, adequate or inadequate, encroaching on others or not, seen or not.

d2,1,4) Modi of movement are given by eg direction, range, speed, path, dynamics and volatility.

d2,1,5) Expansion is by eg adaptive, social, educational, administrative, technical means, change of conditions and environments to widen the radius of action.

d2,2) Types

d2,2,1) Natural freedoms utilize by nature given rooms of individual and collective movement.

d2,2,2) Civilizational freedoms utilize cultural-social-scientific-technical opportunities.

d2,2,3) Individual freedoms are possibilities of physical, mental and spiritual activities of a person.

d2,2,4) Collective freedoms are individual freedoms in collective endeavors.

They enclose set up, maintenance, expansion, alteration, regeneration, reduction and termination of relations for eg information, assembly, association and activities in all fields of life.

d2,2,5) Basic freedoms of movement, privacy, security, speech, action, assembly, education, property, profession, culture and religion are largely constitutionally codified as inalienable human rights.

, d2,2,6) Inner freedoms comprise internal un- and conscious neuro-physiological processing.

d2,2,7) Outer freedoms comprise external conscious bio-mechanical-vocal expressions.

d2,2,8) Truth's freedom allows unrestricted research and description of God, nature, man. society.

d2,2,9) Ethic's freedom does not allow a major inhibiting factor to run to its self-destructive end.

d2,2,10) Historical freedom is a state of affairs with minimal causal dependencies, where not imbalance, enslavement, disintegration, destruction, collapse or catastrophe determine public actions.

d2,2,11) Cosmic freedom prevails over longer periods, where causes of historical developments with their large number of factors are not any more predictable by laws or theoretical approaches, but are subject to chances. Achievements of later born stand in alternatively open, equivalent time.

d2,2,12) Overall freedom is the sum of singular freedoms, their combination and interaction.

d2,3) Interactions

d2,3,1) Singular freedoms of several persons, acting often in association in the same direction, eg assist, overlap, complement, add, multiply and inspire each other.

d2,3,2) Singular freedoms of several persons, not in interaction, coexist with each other.

d2,3,3) Singular freedoms of several persons, acting often in conflict in opposite direction, eg level, compete, exclude, undermine, impair, encroach on and envy each other.

d2,4) Balanced freedoms grant a maximum of freedom to each individual and group within a larger community of people, while observing obligations, rights, weights, limits and reconciliation of conflicts.

d2,5) Limits of freedoms are natural and man made physical restrictions and sanction enforced guidelines of behavior like a social classification, statute, norm, tradition, usage or etiquette.

Common characteristics are eg resistant or ductile, enforced, circumvented or disregarded.

Their range can be given by eg extent of possibilities, rights and conditions like rules of accessibility.

d2,6) Inhibiting factors are restriction, bondage and incapacitation by pretended justifications.

Today, common practice worldwide are arbitrary private and government restrictions to privacy, property, travel, migration, choice of residence and profession, movement of ideas and goods, free speech, assembly, religion, access to communication. Means of enforcement range from social sanctions to sublime oppression to data based rooms of surveillance and administration to deception and violence.

d2,7) Evaluation is as

d2,7,1) Room of movement by eg awareness, potential, reality, use and misuse.

d2,7,2) Restriction by positive sources like ethics and negative sources like arbitrariness.

3d3) History of cognition

History of cognition investigates, records and evaluates cognitive efforts of the past in all fields of life.
Cognitive achievements and failures are measured against possible and actual results.
Achievements increase the human radius of the observable, thinkable, calculable, do- and usable.
Failures do not recognize hidden-open, technical-ethical facts and aspects that should have been seen.

d3,1) Cognition within political-social history recounts its ethos, efforts, discussions, events, conditions and impacts on the state of affairs over representative historic epochs.

d3,2) Cognition within the history of the sciences recounts its ethos, efforts, discussions, events, conditions, approaches, paradigms, methods, means, concepts, speculations, applications, receptions, risks, dangers, errors and catastrophes. According to the structure of the sciences, there are

- Basic, long term research to answer theoretical questions of fundamental principles with generalities, predictability, applicability and enhanced comprehension.
- General, medium term research in the formal sciences, the natural sciences, the social sciences and the humanities to answer questions out of the present agenda of theoretical and practical tasks to gain in-depth knowledge and interdisciplinary perspectives.
- Applied, short to medium term research in all fields to develop out of political-military-scientific-technological-commercial-social interests goal defined knowledge, know-how, skills, organizational structures-processes and patented, marketable, competitive products and services.

d3,3) Cognition within the history of philosophy recounts its worldviews, dogmas and ideologies.
Schools of thought have bundled epistemic efforts since antique scholarship, eg

- 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)
- Logic is accountability of identity. It lists for a given logical space with a defined set of items, properties and relations the rules for rational, valid, consistent and complete reasoning of eg deductive and inductive, negative and affirmative, a priori and a posteriori conclusions.
- Ontology describes deductively being qua being, its becoming, existing, changing and going out of existence in its meanings, relations, realities, categories, subcategories and modes.
- Idealism claims reality of objects to be mentally constructed and not mind independent.
  A priori reasons claim not to come out of experience, but out of immediate, necessary insight.
- Realism claims reality of objects to be scientifically approximable and independent of thought.
- Empiricism relies on direct sensual, experimental, systematic observation, experience, 3rd party correction and confirmation to gain objective knowledge about natural phenomena and concepts.
- Positivism deduces all information from sensory experience, logical and mathematical treatment.
- Materialism deduces all natural and mental phenomena from matter/energy and its interactions.
- Pragmatism demands practical, applicable functionality in addition to theoretical accuracy.
- Existentialism describes the primarily important in- and outward existence of a free, self-responsible feeling, thinking and acting human individual in an inauthentic environment.
- Historicism embeds scientific theories into relative, dynamic contexts of place, time and culture.
- Phenomenology analyses appearances of objects with their subjective intent to consciously stop, reflect and subtract presuppositions to gain descriptions of objects without self-deceptions.
- Analytical philosophy concentrates methodologically on non-speculative, rigorous inquiries into philosophical-social topics and concepts to gain definite answers in a clear, precise, logical language.
- Critical theory investigates political-economic-cultural power structures, mechanisms and ideologies to develop by enlightenment, reason and the sciences practical alternatives without oppression.
- Structuralism stresses underlying linguistic, psychologic, anthropologic structures of cultural products and is complemented by post-structuralism with various perspectives like ecology and gender.

d3,4) Data explosion

Interests, sources, applications of cognition have become a mass raw material of development as all political to social endeavors build on R&D investments for modernization and improved performances.

- Information has become an exponentially growing production factor.
- Management of knowledge is indispensable to handle data volumes, diversities and complexities.
- Professional fields and applications are rapidly expanding, differentiating and specializing.
  Global political-scientific-technological-economic-social players mass exploit human and natural resources, often to subjugation and depletion in an environment of worldwide conflicts.

3d4) Conviction

Man is centered in his convictions. They are the pivotal deciding points of his actions.

A conviction springs out of faith or a vision or a human concept about life in relation to man, society, nature and the infinite.

It generates an individual, self-developed intent and concept out of an abundance of possible contributions to life and matter.

As a living organism out of a biological base, it trains itself in experience, cognition and awareness.

It pursues contemplative, scientific, aesthetic research to grasp spiritual, understand human and explain natural issues, to describe, interpret, calculate and evaluate them from the micro to macro-level.

Anthropological behavior is integrated into considerations of the multitude of concepts, values and long term future in cosmic dimensions to eclipse homo-cerebralis, -culturalis, -legalis, -activans, -faber, -sociologicus, -cooperativus, -oeconomicus, -ludens, -vitalis, -capax, -patiens and -debilis.

  d4,1) Steps of cognition

    d4,1,1) Passive steps are to stay away from
- Lower instincts of prestige, power, possessions and pleasure.
- Pseudo-mental products like myth, idolatry, superstition, illusion and ideology.
- Evil, degrading individual rights, social frameworks and the natural environment.

    d4,1,2) Active steps are to initiate
- Questioning towards valid knowledge by its subjective, relational and objective factors.
- Expansion of the canon of knowledge across all classes.
- Application of overall comprehension in realization of practical projects.

  d4,2) Horizons of awareness

    d4,2,1) On the individual level, one's life work is guided by personal and collective goals.

    A habitual way of life with repetitive activities, being the largest part of study, work and social practices, serves as a locomotive engine to move large loads.

    d4,2,2) On the meso-level acquired are
- A spiritual horizon with principles of conviction.
- A mental horizon with knowledge about man, society, nature and God.
- A human horizon with long term aspirations and challenges for man.
- A historic horizon with past events leading up to present political-social affairs.
- Overall comprehension with values, priorities, responsibilities, means, tasks and supervision.

    d4,2,3) On the macro-level a visionary horizon encompassing man's possible radius of action and responsibilities in cosmic dimensions.

  d4,3) Results gain
- Overcoming with enlightenment hostile and inhibiting factors.
- Positive contributions to life and matter with their innumerable factors.
- Truth's, ethical, historic and cosmic freedom.
- Expansion of man's boundaries towards survival in cosmic dimensions of space-time.

  d4,4) Today, basic reflective steps for objective descriptions, interpretations and evaluations of objects from their conception to consequences are largely missing, opening in image, system and order fascism political-social-economic rooms for exploitation of man and nature.

3d5) 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.

Supervised are first positions of cognitive political-scientific-commercial-social power.

  d5,1)) Intent is to preserve ethical freedom, that not an inhibiting factor runs to its self-destructive end.

  d5,2) Scaled up intent is moral utopia: awareness of spiritual, human and natural issues, where public comprehension is able to discern, describe, evaluate and act for the long term survival of mankind.

  d5,3) It is trained on issues with universal principals of dignity, life, truth and justice.

  d5,4) It educates the population towards a healthy conscience about right and wrong, true and false.

  d5,5) It educates the population with spiritual, mental, human, historic horizons of knowledge and overall comprehension with responsibilities, priorities, means of enlightenment and tasks.

  d5,6) It overcomes with spiritual-political determination any hostile, inhibiting factor.

0 4   Inhibiting factors

Inhibiting factors comprise errors and intentional barriers.

4a) Errors are deficiencies in intellect.
They are caused by eg thoughtlessness, non-knowledge, mistake, but mostly by irrationalities like

4a1) Primitive aggrandizements like fate, fame, glory, beauty. happiness and sex appeal.

4a2) Self-exultations like man to be the crown of creation, - a self-deception that has been rectified by cosmological insults: man and earth are not the center of the universe, he does not spring out of a single act of divine creation, he is not driven alone by reason and he is vulnerable to minute traces of toxins.

4a3) Caricatures, when reduced to oversimplification, black-white painting and prejudice.

4a4) Pseudo-mental products, lacking sound theology, reason or maturity like myth, idol, superstition, illusion, dogmatism, ideology, construal, social programming and secret policy goal.

4a5) Pseudo-logical reasoning like tautology, pleonasm, circular reasoning and regress ad infinitum.

4a6) They spread by eg culture, teaching, ways of thought and political-social propaganda.

4b) 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 suction cups any object in reach and tangible.
They openly, tyrannically set up arbitrary rules or secretly, hypocritically corrupt equitable law.
They pervert knowledge and with it its natural-human-spiritual realities.
They defile human dignity and universal human, social, natural and spiritual values.

4b1) Targets of gain are mostly self-image, language, frame works and physical objects.

4b2) Targets of loss are mostly the natural environment, another person's property, social-professional surroundings and he himself.

4b3) Targets of elimination are first whistle blowers, watchdog organizations and political opponents.

4b4) Means are acquiescence, subversion, corruption, deception and violence.

  b4,1) Acquiescence yields to political-economic-social pressure as way of least resistance.

  b4,2) Subversion mentally disrespects the gist of an objective standard.

  b4,3) Corruption physically violates an objective standard.

  b4,4) Deception manipulates perceptions, comprehension, intentions, conceptions, decisions, individual actions and social behavior patterns by

- 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 leads to eg system control.
- Cyber control, eg fake news and fiction ware lead to eg biased hyper reality.
- Public opinion control, eg manipulation of content, context, style and image by eg appeasement, diffusion, deflection, distortion, misinformation, omission, elimination, perversion, ridicule, entertainment, glorification, irrationality leads large scale to social reality control.

  b4,5) Violence impairs a spiritual, natural, man made object or human being by degrading abuse, misuse by a civilian tool designed to amend and attack by a military tool designed to do damage.
A society with a multitude of social-administrative-technical interrelations 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.
- Infringement of a political-social-professional framework is by eg harassment, disenfranchisement, oppression, 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.
- Elimination can be by severe cripplement and murder.

4b5) Escalation

  b5,1) Deception and violence can escalate in place to the planetary system, in time to an area, in severity to bestiality, in organization to a totalitarian system and in technology to industrial murder.

  b5,2) Lower instincts drive them to the outmost, prestige leading to image fascism, power to system fascism, possessions to order fascism, pleasure to hedonism and their combination to global hegemonic policies.

0 5   Relation

Cognition conveys information from an object to an investigator to the general public along a consecutive chain and variety of relations, means and media.

5a) Information
5a1) Raw data are signs on a substrate.
5a2) They become information by coding, syntax, semantics and pragmatics.
5a3) 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 handled by mechanical, chemical, bio-chemical and electronical data processing.
5a4) They become a message, conveying a meaning within a context, as part of a competent language.
Language, an open, heterogenous, recognized, formal system, stands at the center of human praxis with text and picture as means of conception, interchange, socialization, spread and increase of knowledge and discussion of issues.
5a5) They require the standards of truth in its narrow, wider and cosmic context.

5b) Transmission
5b1) Transmission is by directed or non-directed conveyance, conduction, convection and radiation.
5b2) Sensory signals run from source to encoder, emitter, channel, receiver, decoder to recipient.
5b3) 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.
5b4) Encoding ranges from plain-encrypted artefact to spoken word to written text to technological signal.
5b5) Channels are eg an environmental medium, tube, cable and mechanical carrier.
5b6) Big Data volumes, velocities and varieties are handled by supercomputers, utilizing very high speed transmission cables and integrated circuits, processing more than 10^{24} calculations/sec.
5b7) Losses can be by friction, absorption, reflection, dispersion, dissipation, leakage and interference.
5b8) Performance measures are eg universality, practicality, flexibility, reliability, consistency, required infrastructure, handling requirements, energy consumption, volume, speed, operating-obstacle safety and costs.

5c) Medium
Medium of a connecting relation is a physical object, a naturally present substance or a man made infra-structure, allowing transmission of data, energy or matter from a sender over a distance to a receiver.
5c1) Appearance can be
    c1,1) Vacuum or open-enclosed, uniform-composite solid, liquid, gas and plasma.
    c1,2) A bound, stationary device like a conveying belt, cable, signal emitter or gun.
    c1,3) An independently moving carrier like an animal, man, truck, train, plane or rocket.
5c2) 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.
5c3) Performance measures are eg universality, speed, efficiency, reliability and costs.

0 6 Object

Objective factors of cognition are worked off in line without being bypassed or interchanged to gain horizontally a gapless step specific data platform and vertically a seamlessly accumulated data structure.

6a) Focus
Questioning, search and focus center on the item at hand, its identity, property and context.
It stands as a single chosen point within the radii of human, historical, mental and spiritual horizons.
It is the starting point for an in-depth study comparable to a decision for action in-reality.
It is directed at the item in all constellations to record the sum of its properties and aspects.
It proceeds intrudingly, surmounting obstacles and exhausting available means.
Its modi range from incidental, superficial and spurious to attentive, planned and systematic.
It records the data of a property according to an appropriate yardstick, method and condition.
Its raw data are taken up by sensual perception and mental consciousness, where they are registered and stored in memory.
The item can be an object of any class, state, composition, quality, quantity and appearance.
It is stripped as far as possible of prior assumptions, systematic knowledge and general context.
It is an isolated unit of a phenomena with an isolated property under focal conditions.
It is practically the smallest unit of observation, being prepared by eg labelling and handling to become with publication and review a recognized objective fact.
6a1) It has identity by
   a1,1) Pointedness through focus.
   a1,2) Isolation through cutout from its environment.
   a1,3) Stability and limits in form, space and time.
   a1,4) Identifiers like discreteness, distinctiveness, individuality, denotability and mappability.
6a2) It has a property by
   a2,1) A characteristic status or behavior.
   a2,2) A relation and transmittal medium 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, elimination, combination and transmission of a property.
   a2,4) Meaning in a cultural context.
6a3) Composite items
Composite items with several basic components and groups of items are separated and combined in their parts/groups for further investigation by eg analysis, synthesis, interpretation and evaluation.
   a3,1) Each basic component/group separately with qualitative properties by semiotic, semantic, contextual meaning and quantitative properties by nominal, ordinal, interval, rational scales.
   a3,2) Possible configurations by hypothesis.
   Common-distinct properties by direct comparison.
   a3,3) Likely additions by hypothesis.
   a3,4) Logical follow up statements by deduction.
   a3,5) Likely extensions by forward-backward extrapolation.
   a3,6) The composite unit/group as a whole.
   a3,7) Their interdependencies, interactions and synergistic-neutral-antagonistic effects.
   a3,8) Inferred general principles by induction.
   a3,9) Combination of simple, separate, unrelated components/groups into one complex, composite whole by synthesis as eg the dialectic resolution of contradicting thesis and antithesis into one coherent statement on a higher, more general, abstract level.
6a4) Evaluation
   a4,1) Focus related standard of truth asks: are item and property identified with position of focus, focal, medial and relational conditions?
   a4,2) Questioning, search and focus are the first bottleneck of cognition and to be able to treat human-natural-spiritual objects according to their true characteristics, relations and forces and have to stand up against errors, omissions, distortions, additions and intentional interferences.
   a4,3) One faulty step can derail the process and turn it inhibitive in its entirety.
   a4,4) Positive and negative consequences of a wrongly missing/added factor can be estimated by comparison against a hypothetical simulation of a course of events with/without that factor.

<u>6b)</u> Observation
Primary intent guides a focus on an item with a property for record and an extended survey.
Snapshot, scanning and sampling are the practical steps of data input by humans and technical devices.
6b1) Snapshot
A Snapshot gains data from the specific item at hand with its then present identity and property at a singular point in space, time and environmental conditions.

    b1,1) It minimizes subjective, medial, transmission, device inherent, systematic errors, statistical variations, environmental interferences and their multiplication.

    b1,2) It repeats the observation for confirmation and to determine the degree of accuracy.

6b2) Scan
A scan widens a focus to a field of continuous observation of a single item and property by varying

    b2,1) Distance to change resolution.

    b2,2) Angle to gain 1D linear, 2D cross sectional and 3D spacial views.

    b2,3) Scale to include microscopic detail and macroscopic panorama.

    b2,4) Range to include back- and forward extrapolation.

    b2,5) Time to include chains of in-external forces from cause to effect.

    b2,6) Place to include contextual situation, surroundings and conditions.

    b2,7) Environment to include interrelational forces.

    b2,8) Human perspective to reveal subjective, relational and objective aspects.

6b3) Sampling
Samples widen a focus to a field of discontinuous observation of a population by picking items from uniform - non-uniform populations over short-medium-long term time spans

    b3,1) Picking from a uniform population with calculated sample frame, size and method of eg random, systematic or stratified selection is to yield indicative and representative statistical measures.

    b3,2) Interviews of a preselected target group of people with prepared questionnaires is to yield a survey with a broad range of political-social-commercial motivations, opinions and attitudes.

    b3,3) Recording of consecutive developmental steps and phases of a project yields a life cycle profile.

6b4) Applications

    b4,1) Observation within the scientific method to gain generalities, regularities and laws of nature correlates variables mostly under controlled laboratory conditions over short-medium-long term ranges.
    Two natural variables yield a correlation factor from close to distant cause-effect relations.

    b4,2) Observation as part of the real life method to gain a person's or group's intentions and conceptions infers backwards from a neutral distance from behavioral indicators like initiatives, reactions and roles within their natural-social-spiritual fields of forces like norms, etiquettes and expectations.

    b4,3) Participant observation as member of the subjects' community allows a real life in-depth study of the political-social-anthropological characteristics of a group of people.

    b4,4) Interdisciplinary comparison of sociologically related phenomena are eg

        b4,4,1) Observation of two ethnicities yields a cross-cultural study.

        b4,4,2) Observation of two religions yields a religious system study.

    b4,5) Medical observation in the emergency is to determine the required medical treatment.

    b4,6) Reconnaissance tracks down possible threats to cover them by continuous surveillance.

    b4,7) Supervisory observation sets up, informs about, watches over and enforces a regulation.

    b4,8) Constitutional oversight monitors political to social positions of power for possible misuses.

    b4,9) Ethical observations scans globally societies and their environments for hidden, escalating trouble spots to uncover the real state of affairs with failures and required remedies.

6b5) Technical devices

    b5,1) Technical devices improve observation in eg speed, accuracy, range, reliability, versatility, indirect measurement, real life data processing for system integration and automatization.

    b5,2) They require tests for effectiveness and performance, maintenance and safety regulations.

    b5,3) Common technical methods of measurement are standardized by international agreements.

6b6) Non-observables are eg past, concealed present, future and inaccessible entities.
6b7) Evaluation is by 1 : 1 congruence of actual and observed property.

6c) Denotation
Denotation attaches to the item in focus a term with a phonetic signal and a written sign.
6c1) 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.
6c2) 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.
6c3) 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.
6c4) Evaluation is by eg marksmanship of central meaning, precision, fluency and acceptance.

6d) Description
A description collects the raw data from an applied focus, an observed item, a property with status, process and change and reproduces them for record, presentation, communication and discussion.
They are to become part of the canon of knowledge.
6d1) Data collection
   d1,1) Short-medium term data are recorded as spoken depiction, logical/mathematical symbol, written text, graphical representation, audio tape and demonstrative picture/video.
   d1,2) History records chronologically, systematically past political-social ideas, forces, events and affairs of a person, group, people or country within a set period by witnesses of that time.
6d2) Necessary content
   d2,1) It states the author's position with intent and issue specific definition of truth.
   d2,2) It states standards, means, methods and results.
6d3) Text
   d3,1) It is out of phonemes, morphemes, lexemes, syntax, pragmatics, semantics and linguistics.
   d3,2) It forms eg atomic and conglomerate terms, sentences, listings, definitions, axioms, analyses, conclusions, laws, prognoses, instructions, themes, theories, narrations and fiction.
   d3,3) Paralinguistic are eg sound, volume, intonation, pitch, range, rate and body language.
6d4) Evaluation
   d4,1) Description specific standard of truth is $\underline{1} : \underline{1} : \underline{1} : \underline{1} : \underline{1} : \underline{1}$ congruence of actual and observed property, term, signal, sign and description.
   d4,2) Descriptions as tools of language are sensitive to paradigms and special interests of cognition and a single missing, distorted or added content feature can corrupt it in its entirety.

6e) Scientific method
The scientific method builds on focus, observation, denotation and description of natural phenomena as a separate class of objects under their given or experimentally arranged conditions to gather empirical data and to make them explainable in reason.
6e1) Main intent is skeptical, careful, methodical experimentation. Observed are the rights of nature.
6e2) Scaled up intent is the empirical listing of all phenomena of nature from matter to plant to animal to human life in exploration of the cosmos.
6e3) Epistemic research goals are expansion of knowledge and avoidance of errors by continuing refinement, enlargement, correction, classification and unification of the canon of knowledge, deduction of cause-effect relationships, induction of general principles and integration into a scientific concept to make them comprehensible according to the categories of reason.
6e4) Pragmatic intent is the empirical listing of objects' behavior along their causal chains with their qualitative to quantitative properties, positive to negative consequences, reconstructions into the past and predictions into the future to generate applications eg it in the public interest provisional political-social recommendations and in commercial interests technical devices in all fields of life.
6e5) The standard process runs along a consecutive series of distinct steps.
   e5,1) First step is a question about a phenomenon of nature.
   e5,2) Second step is collection of existing, publicly available knowledge with its assumptions.
   e5,3) Third step focuses from all conceivable on two isolated variables as possibly correlated.
   e5,4) Forth step focuses from all conceivable on one specific cause-mechanism-effect relation.
   It is formulated as a thesis, a null, statistical or full hypothesis to predict a consequential result.
   e5,5) Fifth step is design of an experiment, isolating desirably under controlled laboratory conditions one variable as leading, independent and the second as following, dependent.
   e5,6) Sixth step is performance of the experiment, often by design of a series, to test the hypothesis.
   e5,7) Seventh step is observation, denotation, description and presentation of retrieved data.
   Stated with it are the study's contextual data, especially the range of validity, degree of accuracy, error calculations and all relevant details to allow third party repeatability.
   e5,8) Eighth step is evaluation of the data with support or rejection of the hypothesis.
   e5,9) Ninth step is incorporation of the data into a scientific concept and to decide on further action.
6e6) Concepts
Major scientific concepts as tools of cognition, comprehension and explanation, abstractly modelling tangible, observable reality are eg forces, physical constants, laws of nature, systems of natural phenomena and a structure of the sciences.
Assumed is universal validity of the laws of physics by enumerative-inductive reasoning.
   e6,1) Forces are a form of energy, acting along a chain of causality on an object.
   They are responsible for past, present and future properties of objects.
   ◦ Physical forces are the strong, weak, electro-dynamic, gravitational ones in space-time.
   ◦ Bio-chemical forces lead over evolutionary times to differentiation and specialization of functions.
   ◦ Human-social forces show themselves in their expressions by communication and action.
   ◦ A causal chain is a sensory confirmed deterministic-probabilistic regularity.
   ◦ A mechanism proceeds in a directed, transient path sequence of pre- to postceding events.
   ◦ Effect is the final observed result, which can lead in a wider context to further consequences.
   e6,2) Physical constants are universal constants in the measurement of physical properties.
   e6,3) A law of nature relates a force-property causally-statistically, qualitatively-quantitatively, one directionally determined to a dependent variable with broad empirical validity and applicability.
   e6,4) A system of natural phenomena can develop out of two or more forces with eg
   ◦ Linear - non-linear, static-dynamic, dis - interdisciplinary relations with conditional parameters.
   ◦ Open. semi-open and closed system with in- to external exchange of information, energy and matter.
   ◦ Conservative and dissipative forms of self-organization.
   ◦ Internal plasticity and external adaptation.
   ◦ Bifurcations towards differentiation and specialization.
   ◦ Equilibrium patterns, ranging from a simple, stable, final state to sensitive, complex states with several isolated points of equilibria to oscillation between border states to changes between states with a labile balance to irregular, chaotic behavior.
   ◦ Applications in eg system design, development, engineering, methodology, analytics and theory.
   e6,5) The logical structure of the sciences comprises the formal sciences, the natural sciences, the social sciences, the humanities and the applied sciences with their basic and disciplinary studies.

6f) Real life method

The real life method builds on focus, observation, denotation and description of intentions and conceptions of living human beings as a separate class of objects within the given spiritual, social, natural living environments to gather representative data and to make them understandable in maturity.

6f1) Main intent is skeptical, sensitive, methodical inference from indicators. Observed are human rights.

6f2) Scaled up intent is the reading of primary-secondary, individual-collective, conscious-unconscious, simultaneous-successive, short-medium term intentions and conceptions of individuals, groups and populations with their programs, organizations, resources and methods in exploration of man and society.

6f3) Epistemic research goals are expansion of knowledge and avoidance of errors by unrolling intentions as driving and deciding forces in their variety, freedoms, boundaries, movements, time spans, physiological preconditions, interactions, environments, reconstruction, prediction, classification, managerial-intellectual-political-social-spiritual interpretation, evaluation and inhibiting factors to make them understandable according to the categories of maturity.

6f4) Pragmatic intent is the inference of a single person's or group's intent in a project at a specific place, time and situation for anticipation of positive to negative effects and as a social ambition in the construction of future living environments.

6f5) The standard process runs along a consecutive series of distinct steps.

  f5,1) First step is a question about a person's intent.

  f5,2) Second step is collection of existing, publicly available knowledge with its context.

  f5,3) Third step is to choose the observer's position and focus under real life conditions.

  f5,4) Fourth step to take a non-intruding distance to possible 2nd party interferences.

  f5,5) Fifth step is to take a non-intruding distance to possible 1st party counter-acting responses.

  f5,6) Sixth step focuses on relevant personal indicators like communication, actions, inclinations, disinclinations, values, initiatives, challenges, abandonments, style, habits, experiences, reflections, excesses, deficiencies, situations and contexts.

  f5,7) Seventh step focuses on relevant social indicators like existing and changing external fields of forces with their eg spiritual-mental-mentality-vitality-artistic-political-legal-economic-financial-public media-social-human-material infrastructure and norms, their rooms of movement, local particularities, existential necessities and natural environment.

  f5,8) Eighth step focuses on relevant long term indicators of future decisions and actions under comparative and changing conditions, requiring longer term observation.

  f5,9) Ninth step is observation, denotation, description, interpretation and evaluation of the retrieved determining and co-determining indicators for point by point comparison to the categories of maturity with their innumerable multi-layered realities, possibilities, priorities, modalities, to be recalled out of the fundus of experience, history and maturity, and to decide on further action.

6f6) Interpretation and evaluation of indicators utilizes the given methods of hermeneutics and exegesis.

6f7) Unethically obtained indicators remain in the unethical perspective of the intruder from the bottom of the manure tank and can only be expected to be employed for criminal purposes from deception to terror to murder.

6g) Hermeneutics

Hermeneutics is interpretation of secular verbal, written and multi-media communication of living and deceased people to make them understandable in maturity.

Together with exegesis it draws heavily on antique and medieval scholarship, laying out historic testimonies, their graphic characters, scholarly and artistic disciplines, and on present day natural and human sciences with their histories and philosophies of research.

An objective, semantic text is visualized in a subjective mind for mental processing and response.

6g1) Main intent is empirical and artistic reconstruction, interpretation and evaluation of the selected material from the author's intention to its reception history by a diversity of methods.

6g2) 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 and entropy.

6g3) Text interpretation

Text interpretation highlights the intent of the author with his perspective, self-understanding, background and life conditions with

◦ Elements of text analysis in relation to intent and theme.
◦ Elements like protagonist, antagonist, narrator, plot, conflict, theme and mood.
◦ Truth of documented facts, fictional characterizations, similes and allusions.
◦ Figurative language like metaphor, hyperbole, personification, allegory and irony.
◦ Levels of meaning like denotation, symbol, allegory and metalepsis.
◦ Morals like motto, quintessence and behavioral advice.
◦ Emancipative drives like investigative journalism and social activism.
◦ Existentials as basic requirements and conditions of human life.
◦ Prognostics like forecasts and warnings.
◦ Criticism of individual-social forces, institutions, events, environments and ways of thought.

6g4) Situational and context analyses describe the psychological, communicational, communal, social, economic, scientific, technological, political, zeitgeist conditions of place and time.

6g5) Text comparison describes its traditional, inter-textual and -cultural contexts.

6g6) Text reception history describes the retrospective conditions, traditions, editions, paths, interpretations and 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 awareness of material-human-social issues, self-understanding, life style, zeitgeist, standards and history of mind.

6g7) History of art

History of art systematically condenses the past and present abstract, symbolical, common cultural characteristics of an artist and a group of artists as eg school, technique, genre, regional feature, environmental attribute, geographical origin, avant-garde effort, style, period and epoch.

6h) Exegesis

Exegesis is interpretation of verbal, written and multi-media communication of living and deceased wittnesses of His Word as a separate class of objects to let it be grasped by His Grace in faith and sound theology. The priorities of sound theology are non-violence, not to exclude the love of God, and address of major issues, not to water it down.

6h1) Main intent is empirical, aesthetical and spiritual reconstruction, interpretation and evaluation of testimonials and the scriptures (depositum fidei) by a diversity of methods.

6h2) Text reconstruction aims at recovery of the original or furthest back wording, language, document, illustration, commentary, distribution, version, translation and media praxis.

6h3) 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.

6h4) Text Interpretation

◦ Text interpretation highlights the intent of the author with perspective, biography and 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, culture.
◦ Considered restrictively and extensively, deductively and inductively are place, time, type, commonality, generality, similarity, analogy, probability, possibility, functionality and complexity.

6h5) Situational analysis describes the immediate psychological, communicational, communal, social, economic, scientific, political, zeitgeist, ritual, theological conditions and context of place and time.

6h6) Text comparison describes its traditional, cultural and inter-confessional contexts.

6h7) Text history describes its reconstructions, conditions, traditions and interpretations over the times.

6h8) History of the church, its organization, teaching and public engagements, includes as an independent discipline its material-mental-social-cultural-spiritual-political impacts on all fields of life.

6h9) Assisting are clarifications, outline of limits, adaptions to language and culture.

6h10) Assisting are archeological findings and scientific methods of all fields.

6h11) Development of teaching

h11,1) In study by opening up of new sources, contemplation, advances in scientific, methodological and technological knowledge, public discussions, enlargement of context, raising of standards, correction of errors and failures and new grasping of issues.

h11,2) In inter-confessional dialogs by rectification, compensation, forgiveness, reconciliation, respect for human rights, tolerance, hospitality, cooperation, integrative praxis, exchange programs, recognition of interdependencies to arrive at incorporating statements of faith with superseding, generalizing and unifying principles.

6h12) Concepts

Theological concepts as tools of cognition to find His will in faith as well as natural, human and intellectual comprehension are ordered data platforms of spiritual testimonies.

h12,1) Authorized listing of the depositum fidei.

h12,2) Dogmatic summary of His Word as condensed life science in three basic catechisms about the innumerable factors of God, life and matter

◦ A religious catechism about God, reconciling man with God.
◦ A natural catechism of the creation, reconciling man with nature.
◦ A secular catechism of man, society and worldly affairs, reconciling man with man.

<u>6i)</u> Evaluation
Evaluation is data audit and disposition of the collected results in interaction with all steps of cognition.
It comprises mostly data check, pragmatic assessment and trial for compliance with ethical standards.
Its first standard truth applies throughout its narrow, wider and cosmic dimensions to achieve a gap-, seamless and balanced line of argumentation within universal treatment of all objects.
It arrests any substandard object at any stage of its life cycle for re-design.

6i1) Data check
Data check comprises routine processes like eg review, complementation, arrangement, automatization.
- Review checks the collected data for major qualitative and quantitative deficiencies.
- Complementation stocks up the list of detectable properties from generally publicly available information and research into open questions to serve as intellectual data base for further treatment.
- Arrangement facilitates treatment of data by eg selection, simplification, approximation, abstraction, imaging, modelling, simulation, systematization, big data lay out and environmental assumptions.
- Automatization
  General, routine, sensory-memory-mental-linguistic and also real life responsive steps of cognition can be executed in parts automatically by big data processing with AI in all fields of life.

6i2) Pragmatic assessment
Pragmatic assessment is a data commentary station by general criteria like
- Human intent and conception with their numerous subjective factors.
- Significance of issue with political-scientific-technological-economic-social weight.
- Generation of new knowledge, including the unexpected, exceptional, trend setting, controversial, missing, hidden, difficult to detect, inconsistent, contradicting and of negative impact.
- Short to medium term benefits like quality of design, operational effectiveness, performance, desirability, achievability, affordability, energy consumption, safety and public acceptance.
- Long term developmental opportunities and limitations.

6i3) Ethical compliance
Ethical compliance is a data trial station according to primary, secondary, framework and technical values as outlined at the beginning in section 0 2.
They apply to all objects from the micro- to meso- to macro-scale.
They aim at responsible ethical-technical treatment of all objects.
They rest on human dignity and man given responsibilities.
- Man is responsible to act in the stewardship of the creation.
- He can be held accountable, as he can research, know, pre-calculate, restrain and advance his singular and habitual, individual and collective, present and future actions.
- General responsibility rests with the sovereign, the people, on a global, timeless scale.
- Responsibilities are shared according to contributing parts by eg the researcher, developer, political-social sponsor, commercial producer, salesperson, end user and overall affected general public.
- Faulty execution requires damage assessment and re-establishment.

<u>6j)</u> Documentation
Documentation records the results of all steps of cognition.
6j1) Stated with the results are the contextual data, eg the author's position, his inquiry, intent, issue specific definition of truth, approach, means, methods, conditions, interpretation, evaluation, comments and recommendations with references as well as place, time, range of validity, degree of accuracy, error calculations, relevant details to allow third party repeatability.
6j2) Storage is in the researcher's log and with publication in private-public archives for reference.

6k) Propositional support
Copies of the documentation are handed to peers in the professional field for review.
Responses can be eg support, advice, comment, question, concern, objection, criticism or rejection.
Review of scientific facts is by criteria of
6k1) Stringency of standards.
6k2) Validity of assumptions.
6k3) Validity of reasoning.
6k4) Traceability along a line of argumentation.
6k5) Constructability in faith, understanding and reason.
6k6) Adequacy of methods.
6k7) Reproducibility by replicative tests.
6k8) Objectivity by 3rd party confirmation.
6k9) Predictability of behavior by eg divine revelation, human intentions and natural forces.
6k10) Number of confirmations.
6k11) Non-falsification by a contradicting fact or competing theory.
6k12) Degree of cognitive consonance.
6k13) Quality of references.
6k14) Coherence of a system of knowledge by eg analogy, amendment, extrapolation and unification.
6k15) Form, supporting eg content, context and workmanship.
6k16) Controversy, highlighting eg divergent evaluations and interests of cognition.
6k17) Accuracy and reliability of equipment.
6k18) Appropriate handling.
6k19) Ethical means of acquisition.

6l) Publication
Publication makes documented and confirmed research results available to the general public.
It is via publisher, medium and recipient a contribution to the canon of knowledge and political-social-cultural living environments.
6l1) Knowledge
   l1,1) The confirmed information is constituted as a fact.
   l1,2) It is the basis of objective knowledge, imaging realities with capabilities and boundaries.
   l1,3) It is to comply with the universal object and framework standards.
   l1,4) It is public because of the universals of human dignity, truth and co-determination.
   l1,5) It represents the present day human, mental, historic and spiritual horizons.
   l1,6) It is applied in all political, social, scientific, technological, commercial and cultural fields of life.
   l1,7) It is the basis of long term, systematic development to enlarge human boundaries.
   l1,8) Expansion is by continuous reapplication of the tools of cognition to increase the data base.
6l2) Management of an ordered, pragmatic canon of knowledge provides
   l2,1) Objects' properties, forces, relations, functions, structures and processes.
   l2,2) Objects' applicable ethical standards and responsibilities.
   l2,3) Objects' possible applications with conceivable merits, demerits and inhibiting factors.
   l2,4) Sources with preconditions, concepts and tools of generation.
   l2,5) Check, completion, correction and integration of new knowledge.
   l2,6) Classification according to differentiated, hierarchic and network structures of knowledge and sub-classifications as empirical-theoretical, declarative-procedural and explicit-implicit
      l2,6,1) In place from the micro- to macro-cosmos.
      l2,6,2) In time from the beginning to the end of the universe.
      l2,6,3) In scope through all layers of reality.
      l2,6,4) In a logical structure of the sciences.
   l2,7) Storage of sound, text, symbol, drawing, graph, picture, multi-media presentation and installation-performance record on time stable, environmentally protected substrates in private-public libraries.
   They serve as distributive cognition with available, accessible, ordered, surveyable presentations in global task sharing networks of people and computer for copying, distribution and use.
   l2,8) A selection of relevant records over historic time spans.
   l2,9) Guarding against misuses of knowledge through restriction, manipulation and missapplication.

6m) Public discussion
Public discussion invites the general public to contribute to the present day agenda of theoretical-practical tasks, demanding general recognition, and to bring diverging opinions into the open.
6m1) Pool of voices comprises contributions from the whole spectrum of the population.
The interdisciplinary scientific community, an '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.
6m2) Main intent is to embed enlightenment into political-social participation.
6m3) Scaled up intent is to arrive at a durable society with long term problem-conflict solving.
6m4) Means to realize values and responsibilities are enlightenment.
His spirit with faith, truth and justice overcomes hostile forces. (Rev 19,13)
Applied are political will, persistence, language, presentation, regulation, supervision and arbitration in seamless argumentation to convince and correct. An act of violence remains always an act of despair.
6m5) General public knowledge and objective news about current affairs allow transparent truth tracking.
6m6) Decision, a collective product, is the central, radial point, bundling discussions towards a vote, pooling and distributing resources and handing the event over to the chronicles.
Deciding weights can be eg numbers, persuasiveness, promotion and absence of fear to accept it.
6m7) They allow with public contributions universal treatment of objects of any class and magnitude in all applications in any context and environment on all levels of reality, abstraction and complexity.

6n) 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.
6n1) Goal orientation centers on the desired object for in depth attention.
6n2) Goal definition is by philosophy of research with its merits, political-social-scientific-technical-industrial-commercial character, prospects, scope, means, applications and public interactions.
6n3) Means are scientific, artistic, contemplative research, soft-technical skills, experience, knowledge, know-how, public relations and the traditional production factors of capital, labor and natural resources.
6n4) Information by research, development and applications has become the main expansive force of scientific-technological-industrial-financial-economic growth and the main driving force of the shaping of political-legal-social-cultural formations, eclipsing the traditional schools of social thought.
6n5) Rules of development prescribe tiny steps from questioning to realization via eg literature and field search, goal definition, research, forecasts, project design, feasibility study, decision, pooling of human-material-financial resources, test runs, provision of goods/services, marketing and feedback evaluation.
6n6) Creative development generates improved existing, innovative, speculative and visionary objects, which did not exist before in construction of future living environments.
6n7) 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.
6n8) Collective long term, large scale, population wide, generations running, institutionalized, systematic research, development and their applications expand man's boundaries of spiritual, mental and physical capabilities
   n8,1) Theological teachings by spiritual forces through faith and sound theology.
   n8,2) Mental conditions by social forces through maturity, research and development.
   n8,3) Natural conditions by social forces through reason, research and development.
To be achieved is long term survival in changing cosmic environments.
6n9) Predictions are made by futurology, ranging from utopian to apocalyptic scenarios. Utilized are eg collection of data, analysis, comparative study, modeling, simulation, extrapolation and speculation.

<u>6o)</u> Problem solving

6o1) Main intention is to alleviate a short to medium to long term natural-human-social situation, threatening a physical damage, which can be solved mostly by administrative and technical means.

6o2) Issues range from daily needs to creeping erosions to catastrophic incisions.

6o3) Standards are those of human dignity, integrity of nature and their value scale.

6o4) Legal sources are national constitutions with their bodies of law and international law.

6o5) Managerial resources are existing-called in up project leaders and task forces to develop and realize a workable solution.

6o6) Human resources comprise the spectrum of the population with the press, public authorities, advisory panels and the scientific-technological-administrative community.

6o7) Material resources comprise existing-set up, domestic-foreign, government-non-government and private-public institutions.

6o8) Decision on desirable action is cast by a vote of the affected administrative regions.

6o9) Implementation is achieved by eg planning, regulation, financing, realization and oversight.

<u>6p)</u> 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, riot and violence.

6p1) Main intent is to defuse and protect against acute threats of bodily injury and material damage.

6p2) Scaled up intent is observation of nationally-internationally legally protected human and nature's rights as an aspirational red thread for long term development.

6p3) Parties are individual, national and international organizations and sovereign nations.

6p4) A workable, ratifiable solution is gained out of public discussion and negotiations in private-public-national-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

    p4,1) Analysis of the political-military-economic-social constellation.

    p4,2) Legal resources of national constitutions with their bodies of law and international conventions.

    p4,3) Institutional resources of national and international court systems and an International Executive Political-Military Panel.

    p4,4) Diplomatic resources of advisors, inspectors, neutral intermediaries, mediators and arbitrators.

    p4,5) Military resources of local authorities and an international intervention force.

0 7   Summary

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

7a) Achievements

Antique scholarship to modern research have taken a scientific approach to cognition.

- Over the last half millennium, political-social efforts have institutionally, systematically, competitively promoted generations running public education, research, development and applications.
- Huge advances have been made in the humanities, natural sciences, logic, mathematics, data processing, technologies and applications with expansion of the radius of action and generation of power, wealth and an environment of man made products.
- Today, there is not a political-social endeavor that is not based on research efforts.

7b) Failures

7b1) Hardly addressed are the zeitgeist issues in substance, leading to depravation of esprit

- Pseudo-mental products like illusions of human capabilities-conveniences and pseudo scientific concepts like social profiling/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 with its service functions. He does not know how to overcome inhibiting factors by enlightenment or handle conflict solving between hostile parties efficiently.
- 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.

7b2) Hegemonic policies

Most public institutions have forged alliances with global players for exploitation of man and nature.

- Continuing are overpopulation, famines, epidemics, inequities of life essentials, environmental pollution and destruction, leading as mass effective misdevelopments to planetary catastrophes.
- Continuing are exploitation, polarization of wealth, human rights violations, leading as mass effective power tools to destruction of social fabrics, refugee streams, terrorism, mass murder and war.

7c) Accusations

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

They conduct a clandestine, global dirty B-C-G-R-N war between government, private, independent 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 to transform man into a cloneable, programmable augmented cyborg-chimera and to eliminate human roots of dissenting, hostile and moral voices.

7d) Self-extinction

Man has allowed himself to be prostituted by his lower instincts of prestige, power, possessions and pleasure to fall in freedom of action indefinitely low, if not arrested. After colonialism, two world wars and genocide, today, the sum of multiple, escalating gross corruptions in excess of boundaries will lead with modern technologies of mass destruction inevitably to planetary catastrophes, enslavement and collapse of political-social systems and self-extinction of mankind.