

**10.18. Elements of Philosophy 2000/2001 First year: logic (or theory of thought)
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The title. ‘Elements’ (Ancient Greek: stoicheia; Lat.: elementa) means constituents of a totality (collection or system). It also means ‘propositions’. Therein related to the Ancient Greek ‘archai’, Lat.: principia, literally: all that governs.

Here: all that governs observations and reasoning (as axioms of them). In short: what one ought to put first in order to understand something.

Propaedeutic course. ‘Elements’ also means “the simplest propositions,” understandable to beginners by way of introduction.

As an aside, “propaideia” or “propaideuma” (Ancient Greek) meant “introductory instruction. From there: “propaedeutic course”.

1. Object. Reality is comprehensible. Logic aims at the intelligible in reality. Consequence: concepts, insofar as they are incorporated into judgments and reasoning, are the object of logic.

2. Method. ‘Fashion’ (as too superficial thinking) and ‘ideology’ (as too much mere thought-construction) are barred. Well method, i.e. responsible work. What will gradually become clear.

In particular. The course provides concepts. But not in a dilettante (“A dilettante(s) knows something about everything”), nor in a (hyper)specialized (“A specialist(s) knows everything about something”) way.

Philosophy. ‘Sophia’ (Lat.: sapientia), (life) wisdom.-- ‘Philosophia’, familiarity with (life) wisdom, was for Isokrates of Athens “general education” (as in the Biblical wisdom books). For Platon it was the same but for his best students it became specialized professional knowledge.

“Harvard Principle.

Harvard University breeds hyper-specialists. However, in order to avoid graduates becoming “professional idiots” (as M. MacLuhan, “the tender anarchist,” said), this world-famous university provides “general education” that goes beyond the narrow field of specialists. One learns to situate one’s profession in the larger scheme of culture in which everyone lives. And at the same time one learns to put one’s own, sometimes too narrow professional knowledge into perspective.-- That, by the way, is the purpose of philosophy at a higher institute for pedagogy.

Reasoning: daily and formal.

Bibl. sample: G. Bolland, *Hrsg.*, *Hegel's Little Logik*, Leiden, 1899, 253f..

The author shares Hegel's distaste for the "formal" logic of his time. Yet his attitude is shaded. "This rose is red. Well, red is a color. So this rose is something colorful". Behold a formal form of reasoning. Although it is redundant and pedantic to express the formal formula of reasoning in its completeness at every opportunity, reasoning in its many forms is nevertheless continuously at work in our knowing life.

Examples.

On a winter morning, upon awakening, someone hears the car grinding on the street. This provokes the thought "It has frozen hard".

In courts of law, the lawyers' job is to assert the legal title favorable to their clients. -- Similarly, in diplomatic negotiations, both sides raise arguments that are part of an overall argument.

In the cases mentioned, logical reasoning takes place as the processing of data. We all carry out reasoning again and again in our frequently complicated situations. At the same time it is not insignificant that we, as thinking beings, become explicitly aware of our daily way of doing things in this regard.

It is of recognized importance that we become familiar not only with the functions of our organic life - digestion, blood formation, breathing, etc. - but also with the processes and forms of nature surrounding us. In this respect it will be unhesitatingly denied that, just as we must first study anatomy and physiology in order to digest our food or breathe, so too must we first study logic in order to reason correctly.

Note.-- Bolland shares with Hegel the strict reservation regarding the rationalist overestimation of reasoning. Not without attesting to the influence of Romanticism (1790+).

Immediately, Bolland's text also amounts to a defense of the "folk psychology" on thinking so scorned by cognitivists.

In other words: for the highly rational thinking Hegelian, ordinary humanity remains a normal - exceptions notwithstanding - logical thinking humanity.

1. This first section talks about what logic actually is.

Consequence: a concept, with its content and scope, is said and explained. The concept, object of the logic of concepts, is situated in reality: everything that is, is fundamentally understandable - one also says 'rational' - and at the same time object of logic. Concepts are thought and pronounced in a judgment (proposition) including each other.

Already now we dwell for a moment on the duality "phenomenal/ logical": we come to the understanding of something insofar as we grasp it as it appears (phenomenological) and only then penetrate to the reason or ground of it (logical).

After the understanding and judgment comes the reasoning (conditional sentence)

With Platon, we distinguish deduction (one assumes the conceptual content that concerns all specimens or portions) and reduction (one assumes samples from the conceptual scope (collection (= class) or system (= system))).

Since the size of a concept refers both to individual specimens of a collection and to the coherent parts of a system - one then speaks of distributive size (all specimens are alike) and of collective size (all parts of a system are mutually related) - in terms of reduction one speaks of 'generalization' or 'generalization'.

There is formal, understand: theoretical, logic and applied or methodological logic. Sometimes applied logic is called "logic" for short.

The method is invariably threefold: G (given)/ A (asked, requested) and Solution).

What is called "reason" or rather "mind" in the antique-medieval tradition stands or falls with two axioms, namely the identity axiom (phenomenological) and the reason axiom (logical). Although unprovable, they play a continuing role.

Logic stands or falls on defined concepts. Hence the special care to define.

Natural logic follows the triad "understanding/ judgment/ reasoning" but limits itself to the mere logical connection between prepositional and postpositional sentences (logical reduction to mere conditional sentences). Otherwise, it becomes knowledge theory.

Understanding (concept, notion).

Concept

Something (being, given), insofar as it is in our mind, is our understanding of that something.

Two characteristics:

a. it is that something itself, in itself (as Parmenides puts it; “according to itself”), not according to us;

b. it is that something in its intelligibility (one also says “rationality”), i.e. insofar as it is understanding.

Formal logic.

The objective intelligibility is called Gr.: *morphe*, Lat.: *forma*, i.e. the knowledge and thought content. That one speaks of “formal logic” means that the logic has the objective intelligibility as object. Or that the logic means what information is present in something. Or: the information that something is.

Term.

Lat.: *terminus* (think ‘terminology’).-- A concept is present in our mind. We ‘project’ it (cast it outward) in visible and tangible signs (words especially but also figures, diagrams, schemes). Better: the term is the text in which we express (speaking, writing) our concepts and their connections.

Term is not a word.

Logicians often confuse logical terms with words,-- separate words. Nay: a term as a representation of a complex concept may constitute a whole book.-- Or we say “girl” or “child of the female sex”: that is one and the same concept expressed either in one word (term 1) or in five words (term 2).

This is essential to the proper understanding of natural logic.

Content/Size.

A concept exhibits two sides.

a. The content, expressible in ‘notae’, partial terms (sub-terms). Thus e.g. ‘girl’.

b. The scope, i.e. all that exhibits that content. In this case, “all that is girl”.

Note: the poorer the content the greater the scope: for example, there are many more girls than rich girls (the latter exhibiting more features, notae, sub-concepts, than the broad concept).

“All that ... is.

This expression summarizes the theory of concepts. ‘All that’ denotes the scope. ‘...’ denotes the content. ‘Is’ denotes its location in reality (the ontological status). Fill in e.g. with ‘boy’. All that is boy is the extent of the filled-in dots.

All that is, is understandable.

Natural logic begins with a theory of concepts. It is conceptual logic through and through. What does it rest on?

1. A tradition. Platon and Aristotle, the scholastics,--all of them put the ‘eidos’, Lat. species of forma, at the center. For all that is real (‘something’) is, thanks to that forma, form of being, what it is.

1.1. The forma coincides with the essentia, the mode of being. The forma is at the same time ‘ratio’, reason, i.e. that which makes something meaningful or understandable.

1.2. The forma is, concerning the course of something, ‘regula’, rule, or ‘lex’, law. The activity, for example, is governed by it.

The forma is at once ‘mode’ or ‘mensura’, norm, yes, ideal of something. That by which one sees that something is below one’s standard e.g..

Thus O.Willmann, *Die wichtigsten philosophischen Fachausdrücke in historischer Anordnung*, (The most important philosophical terms in historical order), Kempten/Munich, 1909, 63.

Formal logic. What the forma is objectively, i.e., in the objects themselves, is the subjective understanding in our mind to the extent that it actually grasps that forma,--allows that forma to come through.

2. Hegelian point of view. G. Bolland, Hrsg., *Hegel’s kleine Logik*, Leiden, 1899, expresses it as follows.

2.1. “Understanding is that which dwells in things themselves, making them what they are. To understand a given is to become immediately aware of its understanding.” (o.c., 238).

2.2. “Rather, the understanding is the in truth first. Things are what they are because of the activity of the understanding indwelling in them and revealing itself in them.” (O.c., 234).

Note.--In the subject of Bolland’s sentences, *substitute* “understanding,” for “forma,” and ye understand what he says.

Were the data not themselves - in themselves, objective - objective concepts, they could never become subjective concepts in our minds.

This is called “concept realism” or, in Hegelian language, “Objective idealism” (where “idea” functions as “concept,” objective concept then).

Judgments and reasoning are thus a linguistic form of concepts. Immediately we understand the basic structure of logic as “logic of the forma” or “formal logic.” To call “logic” “formal logic” is to misuse the term.

Christian realism on rules of conduct.

Vladimir Soloviev, *La justification du bien (Essai de philosophie morale)*, (The justification of the good (Essay on moral philosophy)), Paris, 1939, is typically “realistic,” i.e. the concepts of ethics (moral theory) represent reality independent of man and his whims.

O.c., 38.-- Soloviev (1853/1900) pays attention to three fundamental feelings that situate us in the whole of reality. Shame, sympathy and reverence are the necessary and sufficient condition of the conscientious life attitudes of man-in-the-world.

If man identifies with what is beneath him, his nature reacts with shame. Controlling, for example, superficial urges flows from this as a duty.

If man identifies with living beings, especially man as a fellow human being, then - especially if the life around him becomes distressed - the feeling of sympathy (e.g. in the form of pity for the neighbor in need) arises. Solidarity with all living things is then also duty.

If we try to identify with what is higher - one thinks of the sacred and the divine (Soloviev thinks first of all of the deity of the Bible), the difference in level provokes awe (reverence) in our minds. This is the prelude to feeling for all that is religion.

Soloviev concludes:

“These are the eternal and unchanging foundations of man’s conscientious life. All other moral phenomena are variants of them”.

Historicity.

Man has history and makes history.--In the course of cultural history, the degree of mastery, the intensity and scope of our compassion, the fullness of awe for the higher vary to a greater or lesser degree. But then in such a way that the axiom of the three basic feelings remains unchanging within the three spheres of our being-in-the-world.

Remark. -- One can see that the notions of “lower/ equal/higher” by the Christian realist Soloviev (he lives by the Orthodox tradition) represent realities that provoke feelings in our nature.

Judgment (proposition, assertion, sentence).

Platon distinguished within the 'logos', pronunciation, the subject ('onoma (Lat.: nomen)) and the proverb ('rhèma'(Lat.: verbum)), dichotomies still found in N. Chomsky (nominal and verbal components of a sentence).

Aristotle defines judgment as "to pronounce something from something."

Judgment term.-- As a concept, once expressed, becomes a term, so an inner judgment becomes a proposition (sense, statement).

Model Theoretical.-- The subject is informative and thus 'original; while the proverb is informative, i.e. model. Both may contain modalities, precisions.

1. Phenomenological.

Phenomenologically, judgment is the result, the statement, of an encounter. To encounter something is "to be confronted with that something". In other words: exercised intentionality. -

Object/subject.

We illustrate by means of examples.

1. "It is cold".--'It' is agreed subject (original) that stands for "the weather". As encounter: 'The weather as it is the object of observation, respectively sensation (together 'experience')'. 'Cold' is a quality of sensation, i.e., the subjective impression emanating from the objectively given weather.

One sees it: object-subject encounter.

2. "How impressive this tropical forest is.

Bibl. sample: K.Krüger, *Deutsche Literaturkunde*, Danzig, 1910, 116 (Figures).

One could call this a stylistic judgment. Yet it exhibits the structure of encounter.

a. The tropical forest is an objective fact or phenomenon.

b. But something emanates from that phenomenon, an impression, which without that phenomenon would not even be there. The shudder - aesthetic in nature - is in other words both objective (it reveals something of something) and subjective (it is essentially sensation-in-perception).

2. Clarity (Hermeneutic)

Aristotle entitles his booklet on judgment "*Peri hermèneias*", Lat.: de interpretatione, On interpretation. Indeed: to judge is to interpret something in terms of the saying, i.e. that with whose including it (within an encounter) is thought, experienced.

Conclusion. Intentionality, core of phenomenology, grounds judgment as a human act.

Phenomenal and logical understanding.

Scenario.

A little boy sits in class on Monday morning looking confused. Not like the previous days. The complexion is sallow white. The eyes look tired. Attention is shaky, indeed absent.

Behold what the teacher directly perceives. The form or nature of being (act) of the little boy comes to (subjective) understanding in the teacher. That first or phenomenal understanding involves at least three sub-concepts:

- a. sallow white facial color,
- b. tired eyes,
- c. shaky if not absent attention. Including the difference noted by the teacher compared to other days.

Logical understanding

Like the ancient Greek “theoria” (Lat.: *speculatio*; a speculator is an observer, even a peeper) so too is logical understanding. Spontaneously the question arises, “What is going on?”

I.e.: “Which is the reason or ground of the affliction - forma - of the little boy?”. Or in more scientific terms, “How does one explain his condition?”. The answer to that is the logical understanding....

The teacher enlightens himself. His parents took it the Sunday night to their regular café. There it remained,--- amidst the visitors with their conversations, tobacco smoke, beer smells. Until about three o'clock in the morning. Because after the race the conversations between the men had become very lively - according to the mother who added:

“What do ye do about it? The men want their Sunday night!” - and one theme followed another. The café talk - the mother always said - continued until late after midnight. Meanwhile, the mother had put the little boy to sleep on a couch. Until they went home.

The phenomenal concept is thus given a background. An explanation. An explanation. In virtue of the axiom that says, “All that is, is there with a reason or ground.” The full understanding.

All that is, to begin with, is phenomenon, immediately given. After fathoming in a logical way, what does not show itself immediately shows itself. Thus we come via the phenomenal understanding to the full or logical understanding. Here: the little boy in his actual act (forma) is only thus fully comprehensible. This is: understanding.

Phenomenology and logic.

Fr. Krafft, *Geschichte der Naturwissenschaft, I (Die Begründung einer Wissenschaft von der Natur durch die Griechen)*, (History of Natural Science, I (The Foundation of a Science of Nature by the Greeks)), Freiburg, 1971, 145, 173, 271, tells how Herodotos of Halikarnassos (-484/-425; *Historiai*) and Anaxagoras of Klazomenai (-499/-428) honored as a rule of experience and thought “opsis adèlon ta fainomena,” the direct perception of invisible data are the “phenomena.

In other words: through the visible we penetrate experientially/thoughtfully to what is not immediately apparent. Herodotos: “Through the immediately given I conclude to the unknown”.

Bacon (1581/1626; *Novum Organum* (1629)), later J. Stuart Mill (1806/1873) have interpreted the ancient axiom much more experimentally.

Example.

Ch. Lahr, *Logique*, Paris, 1933-27, 587, gives as a model the phenomenon “day/night”.

1. At a ‘mythical’ (understand better: fictional or fantastic) stage, primitives ‘declare’ that “the day brings forth the night,” that “in a universe battle the day loses the battle for the time being.” Fantastic axioms still dominate too much such stage of logical fathoming.

2. Fr. Bacon sees it more matter-of-factly.-- He formulates in triplicate the connection “cause/effect”.

“Posita causa ponitur effectus”, in the presence of the cause there is the effect (the sun rises and it becomes day).

“Sublate causa tollitur effectus”, in the absence of the cause, the effect remains absent (the sun goes down and it becomes night).

“Variante causa variatur effectus”, when the cause changes, the effect changes with it (in winter, the sun’s material position causes less day; in summer, the opposite occurs).

Explanation.

a. Everyone who has eyes sees the phenomenon of “day/night”.

b. But the axioms that govern people make them interpreted in varied ways. Mythic thinkers see the phenomenon in terms of “bringing forth as the deities bring forth the universe” e.g. Greek and modern thinkers see just the same phenomena but postulate different, more material axioms to interpret the same causal process.

Lesson:

seeing and comparing phenomena is stage 1. Explaining them logically takes on other forms over time - with the cultural changes - that is stage 2.

Reasoning types.

Later, we will deal more thoroughly with what reasoning, i.e., the completion of conditional sentences, is. Now, for now the following.

1. *Deduction* (platonic: synthesis)

Let us begin with an example.-

All the flowers of this plant are indigo blue.

These flowers come from this plant.

Behold the dual fact or ‘phenomenon’, i.e. what shows itself immediately. Or what is immediately known.

If the two sentences are thought including each other, then a reasoning becomes possible, namely a deduction.

These flowers are indigo blue.

2.1. *Reduction* (Platonic: analisis).

First type. - Generalization.

These flowers come from this plant.

These flowers are indigo blue.

This is a twofold fact (phenomenon) but different from the above. If we think of the two sentences as including each other and situate them in a context, a reduction (generalization) follows.

All the flowers of this plant are indigo blue.

2.2. *Reduction* (Platonic: analisis).

Second type.-- Globalization. (‘Whole-ization’).

All the flowers of this plant are indigo blue.

These flowers are indigo blue.

Here is a third dual fact or phenomenon. If we think of the first proposition as including the second and if we situate it in a context, a reduction (‘whole’-ization) follows.

These flowers come from this plant. As parts of the overall plant.

Reasonaxiom.

For all three types of reasoning, there is a context that is pre-given (implicitly assumed), i.e., “If a pre-sentence, then an after-sentence. Well, a pre-sentence (deduction) or an after-sentence (reduction). So a after-sentence or a pre-sentence”.

Detour through a context.

The last two, the reductions, can only be sure after a detour. i.e., a situating in a context, summarized in two basic concepts: “The collection of all the flowers of this plant as far as checked” and “The system of all the flowers of this plant as far as checked”.

We will discuss “the detour via a context” in more detail later. For now, we will content ourselves with noting that all reasoning begins with a fact (Given) that provokes a demand (Asked) that finds its answer in the conclusion (postphrase).

Formal and applied logic.

The Latin word for ‘understanding’ was ‘forma’, creature form. ‘Formal’ therefore means ‘comprehensible’, that which is related to concepts or resembles them.

Applied logic (= methodology) dwells on the inexhaustible wealth of applications of formal or theoretical logic (everyday life, sciences).-- Note: often “logic” is used for “applied logic.”

Method.-

(One remembers once and for all what follows, namely the scheme “problem (= given + requested (asked) + solution”).

Ancient Greeks, among others and especially mathematicians, divided all that is real into “the given (and the sought (asked))”

Example.

The task in a class: “ $2+2= \dots$ ”.

1. The task.

It lapses into the two aspects mentioned above.

1.1. Phenomenological basis.

‘Phenomenology’ is the correct representation of the given (= phenomenon), the directly known. In this case: “ $2+2= \dots$ ” (namely the operation ‘+’ and ‘=’ on two numbers and the asked (...)). Correctly perceiving what is given is the basis of all reasoning.

1.2. Logical editing.

The “if, then” sentence governs logic.

The given is expressed in an “if sentence” and the requested in a “then sentence”. Here: “If $2+2$, then ...”. The “then-sentence” aims at the indirectly known (as yet unknown), i.e. what does not show itself but must be demonstrated. Namely by reasoning.

Summary. One, after one of observation (phenomenal understanding; phenomenology) and reasoning (logical understanding, logic).-- Remember this scheme well because it recurs throughout the course.

2. The solution. The asked is actually, logically, a derivation or conclusion.

“If $2+2$, then what follows logically?”.

A ready knowledge (context, actually also a given but not explicitly stated) is always needed in reasoning. Here “A partial sum and a partial sum logically make up a total sum. Applied: 2 (partial sum) + 2 (partial sum) logically make up 4 (total sum).”

Remember well: the reasoning (logic) always includes the task and some appropriate ready knowledge that can be located and found outside the given data. The more “ready knowledge” - general education (context) and professional knowledge - the easier the reasoning! This scheme returns throughout the course as a method.

Reason (rationality) defined by two axioms.

Phenomenology (representation of what is given or phenomenon) stands or falls with the identity axiom. Logic (reasoning) stands or falls with the reason axiom.

Both axioms (basic context) define pure reason.

The foundation: ontology.

His(de) shows itself (phenomenal understanding, is phenomenon) and is demonstrated (logical understanding, in reasoning). Ancient Greek spoke of 'a.lètheia', literally: unconcealment. Lat.: veritas, truth. In scholasticism (800/1450) all that is, is considered 'true' insofar as it shows itself, - as 'true' also insofar as it can be demonstrated by reasoning.

“For Aristotle, the premise that logic has ontological scope is justified by the fact that (...) the first laws of logic (the laws of thought) are the same as the laws of being (reality). (R. Jolivet, *Les sources de l'idéalisme*, (The sources of idealism,), Paris, 1936, 136).

H.J. Hampel, *Variabilität und Disziplinierung des Denkens*, (Variability and discipline of thinking), Munich/Basel, 1967, 14, 17/21, says that if one limits oneself to natural (“classical” or “traditional”) logic, two axioms prove fundamental: the identity axiom and the reason axiom.

As an aside, both were already recognized by the earliest Greek philosophy (Parmenides) and by Platon.

Evidence.

a. No sensory experience, insofar as purely sensory, can “prove” either axiom. After all, all that is purely sensory is only an all too limited application of it. Whereas both axioms are transcendental (encompassing all reality)!

b. No abstract-general reasoning, since it must presuppose both axioms to start with, can strictly “prove” them.

Hampel dwells on W. Dilthey (1833/1911) and W. Wundt (1833/1920) who both recite immediate or direct experience as the source of insight in both axioms. E. May, *Am Abgrund des Relativismus*, (On the precipice of relativism), Berlin, 1941, joins this.

By the way: rationalists like K. Popper (“It is a form of belief”), J. Habermas (“It is the presupposition of communication and interaction”), J. Derrida (“It is the abyss of reason”) a.o. cannot agree on the foundation of both axioms. But they do work with them anyway!

Define (define the being).

The definition articulates the concept content. The classification expresses the concept scope, i.e. all that the content exhibits.

1. *Full listing.*

Also called “summative induction”. -- To define something, being, is to enumerate all and only all traits (sub-concepts) of it so that it becomes distinguishable from the rest of the living whole which is the whole of reality.

2. *Subject and predicate are interchangeable (equivalents).*

The definiendum, the subject, and the definiens, the saying as definition, must be interchangeable, because totally identical.

This is evident, e.g., in “ $a = a$,” a mathematical or even logistic tautology: the proverb provides as information the subject.

Model.

N. Perquin, *Pedagogy (Reflections on the phenomenon of education)*, Maaseik, 1965, 43, lists: “The help of the persons responsible for the outgrowth of the child so that he becomes an adult”. The sub-concepts together form (system) the concept of ‘educating!’

Expansion.

Proponents of adult education (“*éducation permanente*”) in a highly evolving environment broaden the definition.--

1. Education is the assistance of those responsible for the outgrowth of the child and the adult.

2. “For them to become adults” is inappropriate! ‘Adult’ means sometimes “biologically (and culturally) mature” (Perquin) other times “culturally mature.”

Better: “So that they (children and adults) become what they ought to be. Hegelian expressed: so that they may become real, i.e. be able to cope with their tasks.”

Content/Size.

The second definition refers to more copies (children and adults) than the first (children). With the content, of course, the size evolves. Classification: children and adults.

Text.

The definition above is limited to a sentence, a text kept short. In fact, Perquin’s entire book is an extended definition: the initial sentence grows into a treatise. A successful treatise is one long, sustained definition.

Natural logic places enormous importance on defining. Why? Because well-defined concepts make sound thinking,--working logically, possible.

The construction of natural logic.

Understanding.

“This man.

Verdict.

“This guy is getting wet.

Reasoning.

“This man, if he walks in the rain, gets wet.”

The singular term “this man” is explained by “getting wet,” a general term in a judgment. “This man,” explained by “getting wet,” is again explained by “walking in the rain,” a general concept that serves as a condition with respect to “getting wet.” The conditional sense is there.

1. Scope.

All that is natural-logical refers to concepts and their processing into judgments and, in particular, into conditional judgments (= reasoning). This triad - concept, judgment, reasoning - dates back at least to Aristotle.

Direct objects are the conditional sentences (reasonings) of the form “if, then.” More indirectly, it is the judgments that compose the reasonings. The most indirect but fundamental object are the concepts within the judgments and reasonings. Natural logic is concepts logic. For these determine the judgments and reasonings.

2. Logic reduction. (content)

Concepts, incorporated into judgments and conditional judgments, become objects of natural logic on one main condition, namely, they are reduced - reduced - to conditional judgments. The mere conditional connection between pre-sentence (VZ) and post-sentence (NZ) is actually object of logical proceeding.

Categorical/ hypothetical.

“In heaven it is raining cats and dogs. Well, this man is walking in that rain. So he gets wet”.

This is the categorical formulation. Such a formulation may belong in science theory or even ontology.

As soon as it enters logic, then even though it is categorically worded, it becomes hypothetical and thus, “If it rains cats and dogs in heaven and this man walks in that rain, he will get wet.”

Logic is not reality theory without more: it is reality theory expressed in “if, then” sentences. In natural logic, the only issue is the validity of the derivation. Not, for example, whether there is a heaven and if there is, whether it rains and one gets wet there. Even though the preposition is ‘contrafactual’ (unreal), the reasoning is still valid. In virtue of the connection “rain/ get wet”.

2. This second section thematizes phenomenology, i.e., phenomenon representation.

Where the directly given is the requested (as to be described). The Solution is the 'correct' (true-to-life) 'image'.

The phenomenon shows itself because it attracts attention (passive paying attention) or one consciously thinks about it (active paying attention). That "paying attention" is called "intentionality. Phenomenology, by representing only the directly given, reduces that given to itself ("phenomenological reduction").

All reasoning and therefore all logical thinking begins with phenomenology. It is the superstructure of it.

Note.-- Children at their level of consciousness exhibit the duality "given (phenomenon)/ requested (problem)": they describe and reason (generalize, reason a fortiori).

Phenomena show themselves as evidences.

But what one experiences as evident is, among other things, the result of formation. This is then called "(preconceived) context" or "ready knowledge" which find evident what unformed people label as not evident (and thus not immediately given).

Aristotle e.g. starts from "opinions", i.e. what others take as given or phenomenon. A critical examination of "the paradox of Electra" (Reasoning such as, "When someone claims to lie, is he/she lying or speaking truth?" - See below) demonstrates his concept of evidentiality.

Note.-- Frege's "Sinn/ Bedeutung" (a logistic concept) is not to be confused with concept content/ concept scope" (logical concept).

Descartes' interpretation of "I think. So I am" means that he conceives of the unit "thinking/being" as a direct fact (phenomenon) and not as reasoning.

Even formalized thinking inevitably starts from phenomena. These are tasks (given/required). Although it pays attention to other phenomena than, e.g., the existential phenomenologists (who pay attention to what one finds already living in the world ('existing') concerning data), it starts with phenomena!

Note.-- The "argumentum ad hominem" accentuates the fellow fact to the detriment of the fact (main fact). Contested phenomena do not exhibit universally accepted (non-universally evident) but only privately (yes, singularly) evident data.

Consequence: "Worüber man nicht reden kann (universal language), darüber soll man schweigen" (private, yes, singular language).

Phenomenology as intentionality.

Bibl. sample:

- A. de Waelhens, *Existence et signification*, Louvain/ Paris, 1958;
- A. Metzger, *Phänomenologie und Metaphysik*, Pfullingen, 1966;
- R. Guardini, *Lebendiger Geist*, Zurich, 1950.

Discerning phenomena is first and foremost a matter of ‘intentionality’ (mental activity or mind). - With ancient Greeks such as the Pythagoreans, mind is ‘theoria’, Lat.: *speculatio*, awareness of something, the first stage being ‘*empeiria*’ (disclosing something).

Intentionality.

Bibl. sample: *Ch. Lahr, Logique*, Paris, 1933-27, 494s.

Our (self)consciousness, as far as openness or orientation to something, is intentionality.

Note.-- ‘*Intentio*’, in scholastic Latin, means to pay attention to, to pay attention to something, to ‘reality’ anyway. Intention as intention is only one type of this.

1. *The object.*

a. *The prephenomenal object.*

E.g. a girl one does not notice. It is there but one does not pay attention.-- The boy in the class is absent-minded: the lesson is there but is not there “for him”.

b. *The phenomenal object.*

Suddenly one pays attention to the girl. It becomes “phenomenology,” showing itself, directly appraised, given. For the boy, once awakened from absent-mindedness, only then does the lesson begin.-- Only then can phenomenology begin.

2. *Scholastics* (800/1450) *distinguished two degrees.*-- See here.

2.1. *Initial focus.*

“*Intentio prima*”. That on which our attention falls is the object itself (the girl, the lesson). Perception of our surroundings or sensation of ourselves focus on what catches our eye first. This is first-order consciousness.

2.2. *Second focus.*

“*Intentio secunda*”. In all first attention, the second attention is already somewhat present. When we pay full attention, for example, to the girl or the lesson, that second-order attention is completely exposed, - to full awareness, - self-awareness.

Note.-- Fr. Brentano (1838/1917), in the line of scholasticism, put intentionality at the center of his psychology. He paved the way for Edm. Husserl, founder of the phenomenological method, as well as for the later emerging cognitivist philosophy of mind (which, however, reinterpreted conscious life in a materialistic-naturalistic sense).

The given is the asked for in phenomenology.

(What does one pay attention to in phenomenology?) Decisive is the dichotomy (complement) “direct/ indirect knowledge.”

Definition.

- a.1.** The fact (fact, assertion, mathematical formula etc.),
- a.2.** as far as showing (direct knowledge),
- b.1.** correct (= entirely and only entirely the phenomenon)
- b.2.** represent in a sign system (language, mathematical language, drawing, diagram) is phenomenology.

Phenomenological reduction. In phenomenology, the given (GG) is the asked (GV). One does not go beyond what shows itself directly. If not, there is “para.frosunè” (*Platon, Soph.* 228), juxtaposing the requested thinking. As S. Augustine said, “Bene currunt sed extra viam” (they walk well but off-piste).

1.1. Weather Report:

“It will probably rain.” That phrase is the heard phenomenon.

1.2. Merely remembering “It will rain” is unreal perception. The whole fact or phenomenon includes the clause “likely. -- Psychologically, one projects one’s own mental product into the heard weather report. One hears ‘ghosts’!

2.1. A heavily operated lies in intensive care. (Phenomenal concept).

Feels fine for hours.-- Suddenly she becomes unwell. Calls for a nurse. But after a few minutes it passes. The same thing repeats itself two more times. That’s the phenomenon.

2.2. (logical understanding) The medical practitioner interprets the fact as caused by internal hemorrhage. For him, the phenomenon is a symptom (sign) of something else outside the phenomenon. He exceeds by explaining his phenomenology. He is then a physicist and a biologist.

3.1. (Phenomenology) To see electric light (“to perceive”) is to perceive. Put into words, that becomes phenomenology.

3.2. (logical concept) That an electron cloud passes through the wires to and from the lamp is physics. Not phenomenology. For one does not limit one’s reaction to the directly observed. One does not reduce or reduce one’s reaction to the pure phenomenon, to just the phenomenon.

Explanation, explanation, theory on the subject,-- tradition on the subject, -- reactions of mind in response to the given or phenomenon lie outside the given. Fall outside phenomenology. Are ‘eingeklammert’ (said Edm. Husserl), i.e. not denied but put in brackets. One does not pay attention to them. To avoid projections that obscure the pure phenomenon. -- The art of phenomenological reduction is a difficult one.

Argumentation begins with phenomenology.

Bibl. sample: R. Barthes, *L'aventure sémiologique*, Paris, 1985, 85/165 (*L'ancienne rhétorique*).

“Rhètorikè technè”. Lat.: ars oratoria, eloquence, argumentation, rhetoric, i.e., the skill concerning the communication of a message (e.g., opinion, device).

The source, the one who tries to convince, sends a message (what he/she has to say) to the addressees (listeners, buyers e.g.). In other words: GG: a message (content); GV: to work in such a way (especially by speaking and demonstrating) that the message is “absorbed”, i.e. correctly understood and above all accepted.

Note -- Socrates and Platon advocated a rhetoric of conscience: ‘technè’, expertise, not without ‘dikaiosunè’, conscience! For the protosophists (-450/-350) preached only expertise if need be without conscience.

Since especially Ch. Perelman (1912/1984) rhetoric as “neo-rhetoric” is back in. In the courts, in politics, in economics (advertising e.g.), in entertainment (publicity e.g.), in education,--everywhere there is arguing, arguing, persuading,-- one tries to take people by their “weak spots.”

Antique rhetors first assume the given.

We explain.

1. Phenomenological pedestal.

Those who want to convince, first start from “pisteis a.technai”, arguments without reasoning. One first draws attention and benevolence to what shows itself immediately.

a. It is that of which the public is already convinced. So in the marketplace, “Housewives, ye know what it is to stand in the kitchen.” The known.

b. That’s also what can be shown: obvious facts e.g. In a classroom: visual teaching. At the market: a demonstration with an unprecedented device. The unprecedented, but shown. Instantly knowable. Instantly known.

2. Logical superstructure.

“Pisteis en.technai”, i.e. arguments that require reasoning. What does not show itself immediately must be demonstrated.

Thus: a teacher to arrive at the general concept of ‘cone’ - shows (phenomenal concept) three types of cones. From these, the children decide on a general (logical) concept of ‘cone’!

Thus: a politician gets his audience to accept a proposed measure as sensible after discussing the pros and cons.

Phenomenology and logic in children.

Always children protest when adults lie especially. In doing so, they feel that the law of identity (“What (true) is, is (true)”) that governs direct perception is cracked. For children believe in objective, universally valid truth.

Likewise, they were always asking questions such as “By what/why is something so?”; by having an awareness of the law of reason (“All that is, has in or outside of itself a reason or ground”) that governs the directly observed and provokes such questions.

Always parents, teachers or so taught the children to accurately perceive or sense (phenomenal concept): “Hansel, do you read correctly what it says?” Or : “Little Hansel, what exactly do you feel in your body?”. Or they taught children to think correctly (logical understanding): “Raïssa, reason for once. You see that what you say is not true”.

Philosophy for Children.

Bibl. sample: Matthew Lipman et al, *Philosophy in the Classroom*, Philadelphia, 1980.

The author et al. noted that his students usually proceeded ‘irrationally’,--amongst other things under the influence of the then emerging counterculture (1955+) which in its contestation was not capable of logically thought-out exchange solutions. On the other hand he observed that children - not yet corrupted by all sorts of currents - tried to react logically to data and questions.

Consequence: he conceives the project to methodically teach philosophy to children in the VSA - from 5 to 15.

Stories.

As early as Thoukudides of Athens (-465/-395) conceived his historical narratives logically in the belief that at least part of what people do proceeds by reasoning: the after contains a because or a because somewhere.

In other words, the sequel is often a logical response to some omen. Stories (including descriptions and accounts) contain applied logic. Why not make children aware of that applied logic and learn to respond to it with thinking?

1974.-- Lipman founds the Institute for the Advancement of Philosophy for Children. The beginning of a planetary movement to teach children to philosophize so early.

One thinks of e.g. J. Gaarder, *De wereld van Sofie (Roman over de geschiedenis van de filosofie)*, (The World of Sophie (Novel about the history of philosophy), Antwerp, 1994. And many other texts on the subject.

Bibl. sample: Ph. Kohnstamm, *Keur uit het didactische werk*, (Selection from the didactic work), Groningen/ Djakarta, 1952-2, 88/91 (*The outcomes of Piaget*).

The author admires Piaget as a child psychologist, but replaces the evolutionary hypothesis on child thinking - “present on almost every page of his work” - by the idea of learnability, i.e. the influence of both the child’s own nature and the cultural environment. He reproaches Piaget’s experimental method in so far as it creates unchildlike situations with the possible inhibiting elements for the children involved in them and gives a place to spontaneous thinking which “with luck” can be caught without intended testing.

1. Charlotte Bühler (in *Kindheit und Jugend*, 157).

Inge.-- “With 1.6, Inge (...) reasons as follows: she turns to the persons in a circle on chairs,-- one by one. Says : “Inge chairs sits. Papa chairs sits. Mama chairs sits.-- (Pause).-- All’ chairs sits”. (Generalization).

2. Ph. Kohnstamm.

His four-year-old granddaughter enjoyed accompanying Grandpa, who got lost in her little eyes, to his study house (at 100 M.). “When she came to stay with us again shortly after her fourth birthday, I was in Geneva for a conference. At the first meal (...) she asked: ‘Where is grandpa?’ My wife: “Oh, very far away. All the way in Switzerland. (...)

Further question: “All alone?”. To my wife’s affirmative answer the conclusion, “Then I won’t take him to his cottage either,--then he can find it on his own”.

Kohnstamm: “He who can travel far away all by himself can also find his way in his own garden. The conjunction ‘then’ (equivalent of ‘done’ and ‘alors’) with which, according to Piaget, many older children still have so much trouble, is here (...) already at a much earlier age aptly used correctly.

Note -- An a-fortiori reasoning : “He who can handle the bigger, can also handle the smaller”.

Conclusion -- And the rigid evolutionism as well as the rigid experimentalism of Piaget, Kohnstamm at least partly questioned: they do give ‘rules’ (laws) but with exceptions. So they remain folk psychological. They do not give laws as in physics. They do make plausible generalizations.

Phenomena as results of formation.

As stated above: the object of phenomenology is the phenomenon or given. Yet we pay attention: that object evolves.

Bibl. sample: G. Bolland, *Hrsg., Hegel's kleine Logik*, Leiden, 1899, 103ff..

It is a general experience that “truths” (*note:* the author means “evidences”) which are well known to be the result of complicated thinking -- *note:* experiences and reasoning -- come across as “immediately given” (phenomenon) to those who are versed in them, and naturally seem “obvious.”-- Bolland specifies.

1.1. What we call “instinctive knowing,” “innate conceptions,” “natural knowingness”--“sense of community,” etc., appear to have been brought to consciousness through general experience and reasoning (think education, development). Yet their contents seem to be “evidences!”

1.2. Likewise it is with religion and ethics.-- The readily available knowledge concerning God, morals and law, though religion and morals are, according to some thinkers, still so much a matter of “faith” (*note:* denoted as a sure knowledge), i.e. though they are still so much “direct knowledge” (in the eyes of believers and moralists), is in fact result of development, education, formation.

2. A mathematician - like any trained scientist - possesses solutions to problems as ready knowledge. This ready knowledge, however, although ‘obvious’ and thus phenomenon or directly known fact, is only accessible on closer examination through a very complicated analysis.

Note -- A teacher falls ill. A substitute arrives. The first question is, “Where did they get in carrying out the program?” I.e., what is “obvious” to the children, i.e., readily available knowledge? Phenomenon?

Every developed person - says Bolland - possesses a crowd of general viewpoints and basic opinions as directly given in his consciousness. Yet much thought and long life experience has preceded this.

Conclusion.-- The phenomenon evolves. What we find obvious is the result of mental evolution. This is evident, among other things, in what scientists since the Middle Ages have called “status quaestionis,” state of knowledge.

Aristotle on (established) opinions.

Bibl. sample: W. Klever, *An epistemological mistake?*, in: B. Delfgaauw et al, *Aristotle (His meaning for the world today)*, Baarn, 1979, 36/47.

“Ta endoxa”, all that agrees with the common opinion and is at once easily “renowned”. Thus M. Bailly, *Dict. grec-français*, Paris, 1903, 674.

See here what Klever says about Aristotle in this regard.

1. Traditional.

In the past, the term “ta endoxa” was translated by “the probable” or “opinions” in the sense of “non-scientific knowledge” (and thus “uncertain or debatable knowledge”). In contrast, scientific knowledge is “apodictic.

2.1. Aristotle himself.

Aristotle starts from the common - as given - opinions both prescientific and scientific. “Commonly accepted is all that appears to all or most, and among them all or the majority or the best known and most esteemed experts.” (*Topika*. 100b21).

2.2. Opinions and the given or the asked.

When Aristotle talks about the definition of “place,” he encounters five opinions - “partial theories” (Klever) - that reflect as obvious features of the concept of place. These five opinions are the immediate given or phenomenon.

But Aristotle tests those opinions until it is not (anymore) the opinions about “place” but the sought-after, “place” itself, that is exposed. Thus in his *Physica* iv:4.

Aristotle’s sense of cultural-historical evolution.

Not always absolutely certain (apodictic) axioms but also common opinions on the subject are his starting point. He does not always reason from not-knowing to knowing or from facts to theories.

Well from available forms of knowing, “ta endoxa”, to a form of knowing to be acquired in virtue of testing the available forms of knowing. He is on his way. Searching. Towards the demanded, through available knowing.

Note -- It happens that about something we have only opinions as available knowledge. That is then “the phenomenon”, i.e. what is immediately apparent from that sought-after something. But this forces us to investigate that - perhaps only provisional - knowledge. That lesson of Aristotle and of his teacher Platon applies to this day.

Aristotle's concept of evidentiality.

Bibl. sample: E. Beth, *The Philosophy of Mathematics*, Antw./Nijmeg., 1944, 80 vv.

There "the paradox of Electra" is discussed by Euboulides of Miletos (-380/-320). - The text.-- "Tell me : do you know your father?". -- "Yes, I know him." -- "Do you know this man wrapped in this sheet beside you?". -- "I don't know him, of course." -- "Well, it is thy father! So, if ye know not this man, then ye know not your father".

According to logicians like Beth, this is a valid derivation. It should refute the axiom of obviousness as conceived by Aristotle, for "Aristotle has a striking confidence in all that is conceived as obvious" (Beth says).

Well, Euboulides presents someone who relies on evidence. The refuting - eristic - reasoning reads: "If he claims this ("I don't know that man"), then it follows that what refutes him ("I know my father"). Well, the man and the father coincide.

Critique.-- Euboulides uses the term "know" in two senses. The man knows his father o.k.a. his own evidentiality. He does not know the complicated man by virtue of any evidentiality! Logically, without warning, using the same term in two meanings is wrong.

"Sinn/ Bedeutung".

Frege, the great founder of logistics, introduced this pairing. - Here.-- The 'Sinn' (meaning, content) of 'father' and "this complicated man" refers to the same object, since both in fact coincide (Bedeutung, i.e. to what is referred, referent).

Logical.

Natural logic objects to this.-- It knows the "concept content/ concept scope" couple. Here.-- "Your father" refers to what the man knows in virtue of obviousness. "The complicated man" refers to someone unknown to the interviewee (absent evidentiality). It is impossible to logically infer from what the interviewer says that the two coincide, because the conceptual contents "your father" and "the complicated man" do not refer to the same conceptual scope.

What for logistics is one object, for natural logic is two different 'objects', i.e. conceptual dimensions. In other words, Sinn is not conceptual content and Bedeutung is not conceptual scope.

Conclusion.-- Euboulides' refutation is twice wrong and does not at all refute Aristotle's axiom of evidentiality.

We already saw above that he does not naively rely on evidences.

G. Frege : “sinn/ bedeutung”.

G. Frege (1848/1925; *Begriffsschrift* (Term paper), (1879)) espouses an indirect ontology: via ‘names’ (‘proper names’) insofar as they ‘refer’ (allude) to reality situated outside language; (linguisticism)...

Sinn/ Bedeutung. (Meaning/ Significance).

The representation connected with a name - word, sign - he calls ‘Sinn’, meaning.

Model.-- ‘Morning star’ and ‘evening star’ are names, proper names, -- signs (with a representation), two in number. Their ‘Bedeutung’, that to which they refer, is Venus, the proper name of the planet which is perceptible (‘phenomenon’) sometimes as a morning star sometimes as an evening star. One in number.

Note -- In natural-logical language: the same thing in itself (Bedeutung) shows itself in two different phenomena,-- phenomenal modes of appearance (“Zwei Sinne”).

Antonomasia.

Ancient Greek: ‘anti-’ (in place of) and ‘onomasia’ (naming). Substitute name. Thus ‘Paris’ and “capital of France”.

Frege.-- We know things through the ‘proper names’ that refer to the objects (reference). ‘Cleopatra’ is such a singular sign (name) and a proper name. “The mistress of Mark Antony” is a compound name (sign), because the resultant of two constituents (mistress/ M.Antony). A pure case of antonomasia.

Yet (according to Frege) these two signs have the same ‘Bedeutung’, reference (to the one Egyptian princess).

Note -- Sinn (intention, connotation) and Bedeutung (extension, denotation) are distinguishable from “content/scope”.

Frege needs a detour via review. - Natural-logical: the content “Cleopatra” refers to the magnitude (the princess without more); the content “mistress of M. Antony” refers to another magnitude, i.e. the relation at a certain moment between Cleopatra and M. Antony.

So it is with “morning and evening star” and “Venus”: they each have their own scope according to their literal content. It differs.

Kantian expressed: Frege’s couple is based on a synthetic judgment; the logical couple on an analytical judgment (without the ‘detour of a test with facts situated outside the terms, ‘objects’).

So one does not confuse the two. In other words: one language is not the other.

Immediate obviousness: “I think. So I exist” (R. Descartes).

Bibl. sample: G. Bolland, Hrsg., *Hegel's kleine Logik*, Leiden, 1899,191. “Cogito ergo sum”. “I think. So I am”. Note: ‘cogitare’ means “to be aware of oneself and the world”, thinking’ (in that broad sense)

“This sentence sums up pretty much the overall interest of modern philosophy”. Indeed: on the one hand there is “a first-person psychology (which is introspective work) and on the other hand there is the (especially modern) reflective philosophy (up to and including J. Nabert (1881/1960) and P. Ricoeur)...

Immediate distraction.

Hegel cites Hotho, *Dissertation über die cartesische Philosophie* (Dissertation on Cartesian philosophy), (1826).-

This shows that Descartes himself explicitly states that his “I think. Therefore I am” is not a mediate derivation. His statement can be clarified as follows: “I, you, all of us, distinguishable as human beings from animals, are thinking beings.”

Note -- Which seems to insinuate that animals have no consciousness at all. -- Descartes called such existence “prima notio”, basic notion. And such that it is derived from no syllogism.

When one asserts - so always Descartes - “I think. So I am”, one derives actual existence from the ‘cogitatio’, being aware, but not by means of a syllogism.

He knows what makes a syllogism a syllogism; if “I think. So I am” would be a derivation in the form of indirect reasoning, then a first preposition would be necessary, viz. “All that thinks is or exists.”

In that case, the after sentence “So I am” (*note* : via: Well, I think) would be a sentence that one does not realize until it is derived from the prepositional phrase.

The sentence “I think. So I exist” expresses the coherence (the interlocking) between me as a thinking being and ‘being’ (existence).

He states

a. that in the simple experience of conscious life itself that coherence is given and
b. that this coherence goes without question in front as the surest and most evident principle.

In other words: as a primal phenomenon. The term “thus” thus expresses not a mediate, syllogistic derivation but an immediate derivation. Similar to “All flowers are beautiful. So this flower is beautiful” because with “this beautiful flower” the infinite richness concerning being beautiful of all flowers arises. Yes, the endless richness of all that is beautiful: “I think. So I am” is even more obvious than that obviousness!

Phenomenology and formalism.

Bibl. sample: I. Bochenski, *Philosophical methods in modern science*, Utr./ Antw., 1961 (//: *Die zeitgenössischen Denkmethode*n, Bern, 1947).--

O.c., 51 vv. sets out the proposer, logician, what formalism is. We set out briefly, -already now because formalism is one way of thinking.

Combinatorics.

1. A number of places as empty shells (think forms with open spaces).

2. These places are defined through laws and regulations.

3. These places are empty shells that can be filled in.

Working with such places is “combining.”

Example. Take the ISBN. For example, “2-200-21305-0”. This International Standard Book Number shows four places. 2 is the country. 200 is the publisher (here: A. Colin). 21305 is the number assigned to the book by the publisher. 0 is the check digit calculated by the publisher.-- In this way an enormous number of books can be “defined,” i. e. made distinguishable from the rest of reality.

Math.

Bochenski gives his own example.-- $27 \times 35 = \dots$

Multiplication proceeds according to:

H T E	1. a number of places (boxes),
2 7	2. defined according to laws and regulations and
x 3 5	3. interpretable according to that definition. Thus, one may not
-----	place a unit in the box of tens or even less of hundreds.
1 3 5	Thus, one can perform endless multiplications, i.e. fill in the place
8 1	diagram or configuration to define a number.
<hr/>	
9 4 5	

Syntactic rule.

In arithmetic, one does not need to know why one proceeds as one does, because one is limited to filling in according to the laws and rules learned.

$$Ax^2 + bx + c = 0.$$

Again, a series of places filled in by symbols. To combine, i.e. e.g. “solve” this mathematical equation, one may write e.g. “ $ax^2 + bx = -c$ ”.

The syntactic rule reads, “Any member of an equation - if changed from sign to opposite sign - may be transferred to the other side of the equation.”

What Bochenski calls “semiotic methods,” i.e., methods working with symbols and their combinatorics, proceed in this way. This is called “formalism.”

Phenomenological slant.

Bibl. sample: I. Bochenski, *o.c.*, 45vv. -

Again: phenomenology is the description of the given as given (the phenomenon as far as phenomenon,-- the known as known). The demanded is the given, i.e., the already available knowledge.

Mathematics, indeed, logics (mathematical logic) as intentionality (paying attention to something, not to nothing) always begins with a given.-- we now dwell on what Bochenski, as a logician, thinks should be said in this regard.

1.1. Bochenski claims that in language analysis (applied semiotic method) “the object is not given.”

Note -- What kind of human (intentional) activity is it when it is directed at no given object? One repeats “ $27 \times 35 = \dots$ The phenomenon or given is the task here (i.e., the given and the asked):

Given two numbers. Asked: multiply. That phenomenon is first and foremost present (given, available) in the mind of the arithmetician. Incidentally, together with his ready knowledge (context) (here: knowing how to multiply). Put on paper it shows itself to all who can see.

1.2. Bochenski: in semiotic methods, the methods are such that the use of language becomes absolutely essential. - (As if phenomenology as a representation of what shows itself could do without language). The use of language is as essential in phenomenology as in formalism. Thus, use of language is not a knowable feature of formalism alone.

2. Bochenski: in semiotic methods, the argument - the exposition - is usually more complicated so that recording in symbols is much more necessary.

Note -- A phenomenological representation of a complicated phenomenon is also complicated. And capture in signs -- words, eventual numbers, symbols, diagrams -- is necessary.

It is clear, however, that e.g. “ $1952 \times 78.788 = \dots$ ” requires its own use of language that goes beyond the common language. In this sense there is a greater complication and formalistic-mathematical or logistic language use is justified, indeed absolutely necessary.

Conclusion.

A well-defined understanding of what phenomenology actually is necessitates this critique of Bochenski who apparently starts from a too narrowly defined concept of “phenomenology. He forgets to take the couple “given/requested” as a starting point.

Contested phenomena.

Bibl. sample: P.O. Chavez, *Le vaudou (Enquête au pays des zombies)*, (Voodoo (Investigation in the land of the zombies)), Paris, 1997, 105s. (*Une jeune métisse aux étranges pouvoirs*), (A young half-breed with strange powers).

The work breaks down into

- a. the phenomena (phenomenal concept) and
- b. its interpretation or explanation (logical understanding).

Again, the dichotomy of “phenomenology and logic”.

A half-breed, 18, lives in Paris. Here are excerpts from her story.

Vodoe. “Vodoe is witchcraft. When I was seven, This was far from me”. First sighting.-- “In Normandy I was brought up.-- One day I became aware that I sensed things. - I practiced divination. I magnetized (*note:* let my life force be drawn out of me into fellow men). I knew what people could sense. I noticed that my premonitions were coming true”.

My mother.-- “She goes up as a white person in occult skills. She took me to a witch (“une sorcière”) in Marseilles. This one invoked Lucifer because my mother wanted to avenge herself on my father whom she had abandoned. The witch herself first invoked the divine (*note:* a vague name for good or seemingly good beings and forces) and then invoked the devil (“le malin”).

Her lover.-- “I myself have experienced demonic phenomena.-- When I was in boarding school, my mother lived with an Antillean for a time. I had a bad ‘feeling’ from him (*note:* a mixture of sensing and of premonitions). I went to see my mother at the weekend when he had come to live with her. He was not there.

To my mother I said that he wanted to kill her with a knife and also that his papers were questionable. My mother took my words seriously: behind the valises in a room, they found a large Antillean knife, pornography and papers proving that he had come from prison.

A few days later I was sitting at the table in the refectory (...). I realized that a drama was unfolding with my mother: indeed, the Antillean had threatened my mother with the knife at the very moment when I was thinking of her”.

Universal endorsement of such extra-natural facts does not exist. Neither does universal rejection of it. For such phenomena are experienced as directly given only by some. They are “controversial.

“*Argumentum ad ignorantiam*”.

Bibl. sample: I.Copi, *Introduction to Logic*, New York / London, 1972, 76f. (*Argument from ignorance*). Contested phenomena lack universally valid evidence and provoke what follows.

Reasoning.

Pro.--”Thou dost not prove the contrary. So it exists”.

Contra.-- “If it existed, it would turn out (be a phenomenon). So it does not exist”.

-- It does appear but only privately.

1. *Sacred (occult and religious) phenomena.*

No one has yet provided a universally accepted or even acceptable proof that e.g. spirits, telepathy, telekinesis or God, angels and so on do not exist.

Copi.-

1. To conclude from this that they exist is logically invalid.

2. To conclude from this that those who deny them and those who accept them as facts, both must suspend their judgment, is logically valid. “Worüber man nicht reden kann, darüber soll man schweigen”, (What you can't talk about, you should keep quiet about).

In other words, the phenomenon as a phenomenon is - universally speaking - undecided. In the language of Zenon of Elea (+500), “Neither thou nor I prove strictly (*note*: universal assent) enforcing what thou dost assert.”

Copi. “What is astonishing is how many among the most enlightened minds fall into a fallacy in this regard: many scientists deny religious or paranormal phenomena “simply on the grounds that their truth has not been established” (simply because their truth has not been (*ed.*: universally convincing) proven).

Built-in incapacity. Physicalists accept only physical propositions (axioms) and corresponding methods. Without proving that non-natural data can be explained with them.

Also: to this end

1. they transform non-natural phenomena into empty names,

2. empty shells that they fill in with physics products (axioms)

The data are mutilated to their physical determinability.

2. *Judicial phenomena.*

“Nemo malus nisi probatur” (no one is guilty unless proven). From the inability to prove that someone is punishable, one decides to be undecided. Since the issue is possible criminality, one acquits “for lack of evidence.” -- Which should make our judgments and those of the media more cautious!

The House of Madness.

Bibl. sample: R. Montandon, *Maisons et lieux hantés*, (Haunted houses and places), Paris, 1953, 98/100. This is an excerpt from the *revus Psychica* 1932: Jan..

1. Appointed teacher at a college in A., the author lives with a lady.-- After a few months he becomes depressed. So much so that one night, under the pressure of a kind of obsession (not letting go of consciousness), he flees the house and draws.-- He moves into an adjoining room: there, too, he suffered from the same disorders from time to time.

2. He informs himself about the other inhabitants of the house.

2.1. Upstairs lives a young family. Since her arrival, the woman was clearly perceptibly plagued by nervous disorders (melancholy, tearful outbursts).

2.2. Another resident was subject to depression very often.

2.3. The ground floor was inhabited by a pharmacist who very often experienced fits of insanity.-- For example, M.V. exhibited unheard-of fury. In such states he trumped his -- otherwise very gentle -- dogs. It seemed quasi insanity. Such attacks were followed by endless lamentations, a sign of the depression following the attacks.

Note -- This syndrome (set of symptoms) somewhat resembles the manic-depressive type of soul disorder. First a kind of unbounded energy (provoking anger here); then a clear zero point regarding energy (provoking depressive states here).

2.4. The owner's only daughter had slowly but surely become insane and had been hospitalized for "incurable insanity" since two years.

3. The author moves in. A younger colleague moves into his room. Eight months after that he was completely insane. He was admitted to a mental institution where he gave up the ghost after a few days.

Note -- Rationalistically, this can be explained other than by the 'aura' (occult atmosphere) of the owner and her dwelling. But the facts, in fairness, **a.** cannot be denied and **b.** cannot be separated from the dwelling (and what in it?).

Phenomena in hypnotic context.

Bibl. sample: A. Binet, *La psychologie du raisonnement (Recherches expérimentales par l' hypnotisme)*, (The psychology of reasoning (Experimental research through hypnotism),), Paris, 1886.

We dwell on two aspects: the hallucinations and the me-in-the-hallucinations.

I.-- *The “phenomenon” in hypnotic hallucination.*

To state more clearly what the human mind is, a few words follow.

1.-- To a test subject in a hypnotic state, one shows a white cardboard, while saying, “Watch. That is your portrait”.

Immediately the test subject ‘sees’ his ‘portrait’ appear - it shows itself - on the white surface. Thereby the test subject. describes the posture, the clothing e.g. - the phenomenon is displayed - “whereby - it appears - the test subject. (usually experimented with (hysterical) women) adds to the suggested delusion her own imagination” (o.c., 56).

If the test subject is a woman, she is usually dissatisfied and considers the portrait “unflattering.”

One woman, -- quite a beauty but whose skin was dotted with reddish spots, said to Binet once upon viewing (*note:* the woman observes) her “portrait”, “I do have reddish spots but as many as the portrait shows, I don’t have any anyway.

2.-- If the test subject stood still for a while at the white cardboard, we slide it haphazardly between twelve white cardboards.

a: If we do not mark the experimental cardboard, we will not find it.

b. The ‘sick person’ (*note:* Binet apparently works with patients), however, pulls out the experimental cardboard - usually - aptly. Even more so: if one turns the experimental cardboard upside down, the patient sees the ‘portrait’ with the head down! Even stronger: if one takes photos of the experimental cardboard and shows the negative - ten, twenty, thirty days later - the subject still finds his/her ‘portrait’! In other words, there is a hallucinatory memory.

3.-- The chemist at la Salpêtrière Londe tells.-- He shows to a lady “in somnambulism” (sleepwalking state, hypnotic behavior) the negative of a landscape in the Pyrenees - with among other things donkeys climbing a mountain slope - , while he says: “Look! That is your portrait. You are completely naked on it”.

After the experiment, of course, the test subject awakens. But look: she accidentally discerns the negative! The lady becomes enraged at the sight of her nakedness, grabs the negative and destroys it.

Meanwhile, they had secretly arranged for two negatives. Every time she sees them, she trembles with rage because she sees herself photographed naked every time. A year later the hallucination still works. (O.c.,57).

4.-- O.c., 59.-- A doctor, Ball, experimented on a hysterical girl who, in the course of her crises (sleepwalking, of course). "saw" the Blessed Virgin, and that is, Mary in a sparkling garment.-- Each time the doctor pressed on her eye, in that hallucinatory state, she "saw" the Blessed Virgin Mary twice over and over again.

II.-- *The hallucinatory self as a phenomenon.*

Binet does not reduce the mind to the brain (as current brain scientists and cognitivists do).

He says.-- The establishment of an I as the center and subject of all psychic phenomena is not a matter of "agreement" ("convention"). It is a natural fact.

He refers to Richet, *La personnalité et la mémoire dans le somnambulisme*, (Personality and memory in sleepwalking), in: *Revue philosophique* 1883 (March). Richet noted in all experiments of hypnotic suggestion that one can replace "la personnalité" (understand: the role) that is played with another but not the self. The role played and the I are not the same. One can make the test subject change into soldier, dancer, child, bishop, goat during the hallucination by means of suggestion (hypnosis) as much as one wants.

But the test subject repeatedly exhibits the language and actions of the played roles ("characters") but uses the term "I!" throughout. (e.g., "I stand at the front" or "I dance on the stage"). The I acts as a kind of 'implanting point' of all these acts and endures.

Note -- It seems to Binet that in the hallucinatory 'construction' of a character the test subject is reasoning throughout. Hence the title of the book: once as a premise a role (e.g. dancer), then logically - on the basis of resemblance and coherence ('association', says Binet with the Anglo-Saxon psychologists) - he/she 'reasons' deducively about everything that is connected with the role to be played.

Conclusion: even in the midst of hallucinations, the human mind "reasons" logically.

“Argumentum ad hominem” (given and co-given).

Bibl. sample: I. Copi, *Introduction to Logic*, New York/ London, 197- 4, 74/76.--
Literally: “Argument against man released

Structure.

1.1. The opponent claims **1.2.** something but **2.1.** exhibits certain circumstances **2.2** .
at which one takes him.

1. *Side by side with the given and the requested.*

“Genetic fallacy”. -- The attack on the person and his situation amounts to an “ignoratio elenchi”, the disregard of the task (Given+ Asked). Instead of refuting the opponent’s thesis (Given) with logical arguments (Asked) one attacks him personally in elements of his situation (a co-given and a co-required).

Thus: one questions the philosophy of Fr. Bacon (1561/ 1626) because his chancellorship was taken away from him for fraudulent behavior.

Thus: because it comes from environmentalists, one does not logically engage in environmental reasoning. Finally, it is a matter of (allegedly lack of) authority on the part of the opponent.

2. *Through a detour to the given and the requested.*

“Poisoning the well”.-- “Listen to the words but do not see the deeds” -- The opponent who claims something, one takes by his behavior that is inconsistent with his claim.

So: someone is running high on the Bible and its axioms. Instead of going into the biblical axioms (Asked) and argumentation (Given) one compares them to the behavior of the opponent (co-given and co-required) noting that he himself does not take them seriously with his praxis.

“Ab absurdo”.

Proof from the absurd or incongruous.-- “If ye, Bible-believers, hold your axioms but so conduct yourselves (co-authored), it follows that which you - your - Bible words - refute.”

Psychological Variance.

The Bible-believer ‘rationalizes’ his behavioral inconsistency, i.e., he commits sham logical arguments to ‘justify’ his inconsistent behavior! Here one deals with the (make-believe) justifications and the debate is more directly logical even though the inconsistent behavior (coined) is at the root.

Again: one draws attention to (the lack of) authority based on circumstances (it is therefore a situational refutation) (the sum total of circumstances is the situation).

Phenomenologies.

A. Virieux-Reymond, *l 'épistémologie*, PUF, 1966, 52/57 (*la méthode phénoménologique*), vat H. Spiegelberg, *The Phenomenological Movement (A Historical Introduction)*, 2 vols., The Hague, 1960, together.

E. Husserl, the founder, went through four phases: one logical, one psychological, one philosophical of life (“die Lebenswelt”), one Cartesian, strictly metaphysical (according to E. Fink). Which indicates ambiguity.

Appl. model.

Some phenomenologists favor human perseverance. Thus hope as intentionality.

a. The subject - the humanist, atheist or otherwise, the Jew, the Christian - hopes (intentionality)

b. the reasons – in virtue of science and rationality, faith in Yahweh and His Messiah in the end times, faith in the Holy Trinity and its workings

c. the object -- to achieve a better future (however possible) --. -- One sees the intentional structure.

1. *Unanimity.*

All phenomenologists agree on three aspects:

a. singular or private phenomena (here: the three types of hope);

b. eidetic reduction, i.e. the isolation (abstraction) of common properties (here: subject, object, reasons and intentionality, the hope) that make up the ‘eidōs’, the being (‘Wesensschau’),-;

c. comparisons with other similar or related phenomena (here: the counter model ‘despair’ or also e.g. ‘unconcern’ concerning future expectations).

The differences between the types of heaps briefly mentioned above concerning subject, object, reasons and intentionality are put in brackets to leave only the eidōs or universal being.

2. *Disagreements.*

A smaller number of phenomenologists agree on four aspects:

a. the study of the modes of manifestation of the phenomenon;

b. the ‘constitution’, i.e. the coming into being of the phenomenon in that it shows itself only if it penetrates our consciousness;

c. the phenomenological reduction or ‘epochè’, i.e. the suspension of the (naive) belief that the phenomenon is outside consciousness - extramental;

d. the final interpretation of the phenomenon (uncovering the meaning).

Note -- We adhere to the “given/requested” pair in this course.

Epistemological comment.

‘Epistemology’ is science and even knowledge theory.

Bibl. sample: Ch. Lahr, *Psychologie*, Paris, 1933-27, 113/125.

Phenomenology prioritizes experience (perception/awareness) that permeates consciousness.

1. *Immediatism.* Also ‘intuitionism’ -- Aristotle and the scholastics, Th. Reid, W. Hamilton (1788/1855; Reid’s theory on the subject he called ‘presentational’, that of his opponents ‘representational’), M. de Biran, H. Bergson et al. argue that experiences, basis of direct knowledge, involve direct contact with the experienced.

Problem.-- “So how does one explain faulty experiences?”.

2. *Mediatism.* Demokritos of Abdera, Descartes, Leibniz, Locke are objective-mediaists; H. Taine, V. Cousin are subjective mediators. Objectives: between the (obviously indirectly experienced) given and the experience itself, they switch an intermediate term.

Subjectives: the link coincides with the altered awareness of the indirectly grasped fact or phenomenon.

Bibl. sample: C. Sanders et al, *The cognitive revolution in psychology*, Kampen, 1989, 109/138. The authors talk about two alternatives among cognitivists. One sees Hamilton’s terms recurring.

1. *Presentationists.*

J.J. Gibson et al. (‘ecological’ thrust) say: from the inherently meaningful (conceptual realism) environment, a meaningful stimulus emerges (“I see a girl coming”) that elicits an ‘affordance’ (response from the experiencer) (“Glad to see them”).

Consciousness psychologists (O. Külpe e.g.) tend toward presentationism.

Again, “So how does one explain faulty experiences? “.

2. *Representationists.*

J. Fodor et al: in response to a stimulus from an in itself meaningless (conceptual nominalism) environment, the organism produces a ‘representation’, as an intermediary, which leads to a stimulus.

Problem.

Mediatists and representationists invariably compare given/intermediate/content of consciousness. If they do not at all reach the given itself - immediacy, presentiment - how can they compare?

In other words, somehow mediatism or representationism puts immediatism or presentationism first and refutes itself.

3. This section discusses ontology as the pedestal of logic.

Phenomenology is grasping and representing reality as far as given. Logic is to decide from given reality (articulated in two prepositional phrases) to a requested (sought) reality (articulated in the postpositional phrase).

In other words, (phenomenology and) logic are forms of ontology.

Ontology pays attention to given (phenomenal) and to requested (logically justifiable) reality.

Note -- Since Chr. Wolff, metaphysics lapses into

a. ontology that pays attention to the general in all that is real (the transcendental) and

b.1. in cosmology (which deals with the universe in which we live), philosophical psychology (better: humanity) (which talks about the embodied soul in man) and theology (which brings up the sacred and all that is deity) as well as

b.2. all other subjects.

This whole, if fully worked out, would constitute an encyclopedic knowing. Mostly, metaphysics amounts to - dependent on individuals and time periods - sampling into that overall reality.

Being, being. Dialectic (Platon), first philosophy (Aristotle),-- modern: 'ontology' is talking about what has been called being or being since the ancient Greeks, i.e. about all that is (diachronically: all that was, is now, will ever be, - a term already found in Homer).

The conceptual content. To ask about "whether and to what extent something is" (existence) and about "what or how that something is" (essence) is to ask about the singularity (identity) of that something. In other words, ontology answers the questions "how real is something" and "how is it real."

The scope of understanding.

Everything that is 'something', i.e. not-nothing, is the comprehensive object.-- Being is varied: becoming/ eternal, mental/ extramental etc. -- One does not confuse the strictly ontological language with the other - e.g. scientific - language in this respect.

Culturology.

Hegel, Willmann e.g. developed a theory of reality that thinks in the triad "given (phenomenon)/ demanded (logical operation)/ solution".

The solution which can cope with the given and the demanded is called, with Hegel at least, 'wirklich', real, i.e., reality-accurate,-- better: logically justified. All that is logically justified is 'real'. Thus ontology is at the same time philosophy of culture.

Ontology (reality theory).

It is sometimes said, "Philosophy is worldview and philosophy of life insofar as it is justified." We explain this definition.

1. *Intentional.*

Ontology, the core of philosophy, is paying attention to all that is 'real',-- in Ancient Greek 'being(de)'.

2.1. *Object.*

Reality is what is paid attention to. And doubly so:

- a. given or phenomenal reality that appears in our experience;
- b. sought (requested) reality that we suspect in the given.

2.2. *Method.*

It adapts to the apparent dichotomy above.

a. Philosophy as a theory of reality (ontology) represents all that is (diachronically: all that once was, now is, ever will be). It is thus phenomenology.

b. Philosophy transcends the phenomenal being or directly known to the wanted or requested. She is thus logic. It is not surprising, then, that Aristotle, following Platon's lead, puts logic first as the 'instrument' of philosophies. Which centuries later Hegel (in his way, admittedly) still does.

Metaphysics (metaphysics).

Christian Wolff (1679/1754), the great rationalist, divided philosophy into pretty much as follows. Hegel follows him in this. Metaphysics is in subjects elaborated ontology.

a. *Ontology.*

Reality in its general traits (collection) and its generality (system) is the object without question.

In Hegel's interpretation (in which he is very traditional by the way) reality is at the same time task, i.e. grasping what is given and asked, as being gifted with conscience. Consequence ontology is the basis of moral philosophy (ethics). In other words, a human being who conceives of and treats reality without conscience is an "unwirklicher Mensch", a being alien to reality.

b.1. *Three main subjects.* The overall reality or being(s) is first of all universe (cosmology or universe science), then humanity (psychology or better human science) and finally deity (theology).

b.2. *Other subjects.* These are innumerable as the whole of reality is varied. Thus e.g. philosophy of language, philosophy of law, -- philosophy of history etc..

All in all, an encyclopedic whole. In that whole, philosophy represents a set of samples.

What is “real”?

Platon called ontology “dialectic,” Aristotle “first philosophy,” but since Joh. Clauberg (1622/1685) it has been called “ontology” (“onto- (being or being) and -logy (bringing up)).

Definition.

To define is to articulate the conceptual content and scope. What does “really(he)” mean and what does that word refer to?

‘Something’.

Is reality or, as the ancient Greeks said ‘being’ or ‘being’, all that is anything i.e. non-nothing. Diachronic: “ all that ever was, now is, ever will be”.

Id.-- Or “identity”.

That word means what something is to the extent that it has its own being (reality). Something insofar as it coincides with itself. This identity entails that something, although it forms one whole (system) with the rest of all that is, is nevertheless ‘essentially’ (i.e., under the point of view of what it is), distinct from it.

Existence/ essence.

Now what does the identity of something consist in? Platon already distinguished two aspects in the identity of something to the extent that that something elicits an affirmative answer to the following twofold question.

1. “How real is something?”.

On that one says it is (diachronically: was, now is, will be). Whether it is, is shown by that it is. That is called ‘existence’, i.e. actual existence. Such that there is ascertainability, attainability, involved.

2. “How is something really?”.

Answer: one says what it is,-- diachronically: what it was, is now, will ever be. This is “beingness”.

Both aspects are inseparable but distinct. In one!

Conceptual content/conceptual scope.

The content of reality is identity in its two aspects. The extent, i.e. that to which that content refers, is everything that is something, i.e. non-nothing.

Such an absolute magnitude is “transcendental” (all-encompassing). For outside of everything there is nothing! One does say “the absolute nothingness” but that is a figure of speech because that absolute nothingness is “absolute nothingness”.

To say that something neither actually exists nor has a mode of being is to sell absolute nonsense (“semantic nonsense” others say).

'Being' and 'being' (meanings).

"The word 'is' has at least a dozen meanings that differ." Thus I. Bochenski, *Philosophical methods in modern science*, Utr./Antw., 1961, 61. Like others (G.Frege (1848/1925), L.Couturat (1868/1914), B. Russell (1872/1970)), Bochenski argues that this makes the term 'being' as ambiguous in exact language use unavailable.

Paradox.

All those writers, when expressing themselves quite correctly on the subject, regularly use the term 'are': precisely to claim that 'are' is unusable for correct language use.

Projection.

In logics, "being" is used as a word. In natural logic it is a term. Words do not confuse one with terms. For example, in "is beautiful" "being" is contextual and thus one term with "beautiful. Logicians and cognitivists use words contextually and play their view against the use of "are. They project logistic language into natural-logic language.

1. Noun.

"Being" or "the being" or "being" means, in traditional ontology, the totality of all that is (diachronically: all that was, is now, will ever be). In that all-encompassing or transcendental concept one situates singular ("this being here and now or there and then") and private ("these being") realities.

2. Verb

Here the two aspects of reality show themselves.

2.1. Existential.

"God is (there)". "All that is, is". "It was so far." Thus "being" means to be discoverable, to be ascertainable, to be. Factual existence.

2.2. Essentials.

"God *is* at work." "This girl *is* younger than that". "It *was* so busy it *needed* rest". Along with the italicized words (actually: partial terms), 'is' or 'was' makes up one term with many words. Thus used, 'being' substantiates the being or essence (the "being so").

Term and concept.

In natural logic, the term is the verbal expression of a concept. When this concept consists of many sub-concepts, many sub-terms correspond to it, but it remains a single concept (the coherence weighs in).

For example, " $2 \times 2 = 4$ " is one concept (the sum of twice two) but mathematically expressed as three numbers (concepts) and two operation signs (concepts).

Types of reality.

Many misunderstand ontological language. Some explanation.

1. *Becoming being.*

“What becomes is not yet” (according to non-ontological language). All that changes (arises/decays, ‘moves’ the ancient Greeks say), is one type of being or reality. ‘Being(the)’ refers to both temporary and eternal realities.

2. *Mental are(de).*

Different types.

2.1. *Drawing Theory.*

“If a and b, then i.a. a or b”. “ $2 \times 2 = 4$ ”. Signs (symbols) are not realities” (so they say). In ontological language, they are indeed ‘being’ or realities. Mathematics, logistics does not treat no nothing as data but realities first projected in the mind and then on paper, “no-nothing’s”.

2.2. *Oniric (dreamlike).*

“Dreams are unreal.” Yes, in non- ontological language. Dreams are and as an experience and as a content ‘something’! And - as psychologists and others know - dreams can have more effect on disturbed people than realities situated outside the imagination and the mind. - Let us not forget nightmares, for example.

2.3. *Fantastic (imagined).*

“Fantasies are unreal”. Yes, if one holds as an axiom that “reality” exists only outside the mind, outside the imagination.-- S.Freud put forward the oppositional pair “Lustprinzip/ Realitätsprinzip”,-- not as an ontologist but as a psychologist: lusts as permeations and as contents cause behaviors and show themselves as realities.

2.4. *Artistic.*

Artistic (including literary) fiction (e.g. science fiction) gives us one type of reality. Utopias (from Platon’s ideal state to the products of today’s futurologists) are mental realities but not absolute nothingnesses.-- Ideologies make history both as experiences and as contents.

Conclusion.

The conceptual content of ‘being(the)’ or reality is defined differently in ontological language than in colloquial language or even and above all in scientific languages. Language facts (‘language games’ said L. Wittgenstein) do not confuse one with another.

If not, one often creates dearly misunderstood issues. Of these, ontology is regularly the victim.

Heidegger's critique of Western ontology.

Bibl. sample: M. Heidegger, *Introduction to Metaphysics*, Nijmegen/Leuven, 1997. Heidegger (1889/1976) taught Western ontology in 1935. In 1951 he had its text published.

Thinking apart from reality.

'Seinsvergessenheit' he called it. -- According to Heidegger, the Western way of having and making history ('Geschichtlichkeit') with its rationalism, technization (the social engineering of being),--with its desecration, ecological calamity, massification of human beings, shows that Western metaphysics, the root of Western culture, thinks and lives apart from the true nature ('essence') of 'being'. As unreal.

Fundamental ontology.

Back to the foundations of ontology! To the question, "What is 'being' now?" For "the West" (from Platon to Nietzsche) confused being with some being. This confusion explains the misery of Western culture.

Misrepresentations.

Being, which extends beyond every being (to be understood as some given fact), was mistakenly distinguished from becoming, seeming (semblance), to have to do ('Sollen'), which is in morality, law, what shows itself, thinking (mental contents). Thus, among other things, being omnipresent was confused with being materially graspable and tangibly present (as materialists see it).

The true essence of being was thus obscured rather than illuminated. For there is becoming being, apparent being, proper being, thinking being, material tangible being. But being may not be identified with it: it reaches above it as being present in it.

In other words, one big series of 'ignorationes elenchi', one comprehensive misunderstanding of that which it is actually about, namely, "What right is reality?". Understand: reality without more.

Note -- Heidegger was a Nazi. Until the end of his life, albeit in a nuanced way. Many are therefore tempted to apply some kind of argumentum ad hominem to him. And too easily confuse the fact - his Nazism - with his actual argumentation which we have briefly outlined in its essentials above.

'Identity' as abstract-unchangeable identity.

Bibl. sample: G. Bolland, *Hrsg., Hegel's little Logik*, Leiden, 1899,115. We read what Bolland, Hegelian, writes on the subject.

1. Direct experience (perception/ sensation) and feeling are the first degree of thought. The concrete fact, here-and-now, shows itself in its "this-here-and-now".

2. The abstracting mind, however, selects from the concrete fact (phenomenon) something separate from the rest (= abstraction), sticks to it, and what is decisive, it establishes as unchangeable in a concept(s) definition. - This is how the logic of the time interpreted 'identity'.

Example.

Physics, as abstract-unchangeable thinking, captures e.g. "this-here-now" as "metal" in a physical definition, which drops the "here-and-now" to leave only the this -- e.g. metal -- as unchangeable given.

In other words: to the given fact corresponds in the mind of the physicist an unambiguous concept to which in the language of physics an unambiguous term corresponds.

In the spoken and written language of physics, that term retains its invariably-abstract meaning such that between physicists there is a predictable because unified concept on which communication rests. - This is how Hegel interpreted the "formal" logic of the time.

"A is A".

Or shortened symbolically "A=A". -- 'A' (subject, given), detached from the context of concreteness, detached from the process of universe, possesses an identity, a secluded and unchanging identity. This is his singularity card.

'A' as the subject of a sentence asks for 'A' as a predicate, where 'A' as a predicate is equally separated-unchanging.

This is the univocity axiom that makes it possible to construct texts in which the same term expresses the same concept that corresponds to the same experiential fact.

Deviations. All those who lie, all those who speak or write as a feral spirit, all those who operate negationistically, are sinning against the identity so defined.

Character. "Who wants something great must know how to limit himself" (J.W. Goethe). 'Character' is "to hold unambiguous, separated from the rest, unchanging goals." Thus Bolland with Hegel.

Phenomenology as a living encounter with living reality.

Bibl. sample: G. Bolland, *Hrsg., Hegel's little Logik*, Leiden, 1899, 235. The Hegelian Bolland rightly distinguishes two modes of thought.

1. "This rose is red."

1.1. Abstract logic first detaches individual data from the concrete connection.-- "To the subject 'rose' I add, judging myself, as it were, the saying 'red'. First there was - thought apart - 'this rose' and then - thought apart - 'red'.

1.2. Speculative (concrete) logic thinks together what is coherently given. This means that for such thinking "this rose is red". Not she adds redness to this rose! For the rose is one with the redness; more than that, it is a living concept (it arises, develops over time its own red color which emerges from its forma, its very being). Only within a time span we really understand the redness that is only there at a given moment: "This rose is (now) red".

2. "Julius Caesar".

Is the rose a living concept (as an organic being) a human being is all the more so.

2.1. Abstract logic thinks of "Julius Caesar" as a reality detached from Roman history and that of his lineage. What history books say about it is added to that abstract concept by a living historian adding realities to each other.

2.2. Speculative logic thinks of things existing together (including each other) and in movement, i.e. as a process. Thus Julius Caesar (-101/-44) is a living concept, which is one with all the phenomena that Julius Caesar shows and is one with the phased life that he 'is'. He is becoming reality.

So: J. C. was born in Rome, waged war in Gaul for ten years, crossed the Rubicon. These sentences are dead sentences unless they are thought of as moments (movable aspects) of the living understanding (understand: objective understanding or forma) that J. C. was. In germ, all the events that characterize him, i.e. form his understanding over time, were already in his existence from the mother's womb.

The concepts in which we think him, the judgments we make about him, are only what shows up as his evolving being (forma) or objective understanding. Not we add anything! We express what belongs to him as living understanding. That is living encounter with living reality.

Children and evolving data.

“An evolving A is an evolving A.” Behold the identity axiom. Now, what evolves involves uncertainties that call for conjecture.

Bibl. sample: J. Cohen, *Chance, skill and luck. (The psychology of guessing and gambling)*, Utr./ Antw., 1965, 165vv..

GG: “It will probably rain.” **GV:** “What does that sentence mean?” (asked ten-year-old girls). The phenomenon here is a statement. The following samples show how the sentence, a statement about an evolving phenomenon, is understood. Through the sentence, the girls are confronted with an evolution, i.e., a changing form of being or “forma” (objective concept).

1.1. “It is very plausible that”. “I suppose so”. “I am not sure that”. “I do believe that”.

1.2. “‘Likely’ means it could or might rain.

2. “It might rain. I think it will rain. I am sure it will rain.--I doubt it will rain”.

3. “It might rain heavily. There might be thunder and lightning, It might be fun. Thou shalt probably have fun with it. He will probably come and get you”.

Note -- Responses shift from business to fantastic.

Statistical induction. Induction is statistical if its summering (its total) differs both from 0 % and from 100 %.

Around 50%.-- It is more likely that it will rain than that it will not.

Note -- “Probably” indeed insinuates a greater degree of “will be.

Around 45%.-- It is almost but not quite certain to rain.

Note -- The “will be” is pushed through here.

-- About 5%.-- It is just as likely to rain as not to rain.

Note -- The probable is downplayed here.

Phenomenological-Logic. The sentence “It will probably rain” expresses the creature impression emanating from the evolving weather. The objective concept (forma) is so slippery that certainty does not exist and one is forced to guess and gamble - title of the book. - Rigid phenomena smile at us. Changeable ones make our subjective understanding of the given more difficult.

Data in developments.

Bibl. sample: Fr. Engels, *Ludwig Feuerbach und der Ausgang der klassischen deutschen Philosophie*, Stuttgart, 1888.

“No philosophical phrase has brought upon itself the thanks of narrow-minded governments and the anger of equally narrow-minded liberals as Hegel’s famous phrase “All that is real is reasonable (‘vernünftig’) and all that is reasonable is real.”

Is ‘reasonable’ all that has a sufficient reason or ground. Immediately it is justified and therefore ‘real’: i.e., it can handle its task.

Thus: in ancient Rome, the kingdom became “unreal” and the republic became “real. Later, this in turn became unreal and the empire became real.

According to Hegel, by 1789 “l’ancien régime” (the old regime), had become so unreal that the French Revolution - Hegel was an enthusiastic supporter of it - was justified, because “really” adapted to the changes.

Rewrite.

Hegel reproached the formal logic of his day for its “rigidity”. “A = A” where A is immutable.-- Yet formal logic stands up to that reproach. And it does so as follows.

The given - e.g. a political situation - is an evolving form (objective concept). To grasp this data-in-its-evolution implies that one forms from that evolving objective concept a subjective concept as correct as possible. This is: that one follows the evolution. Following closely. That is the proper phenomenology. It is not limited to rigid phenomenology! Immediately following logic, i.e. tracing the reasons or grounds, the existences, of the evolving phenomena, in the wake of phenomenology. That is the correct logic.

In fact, our phenomena description is often ossified and our logical grounding of the phenomena is equally alienated from the changes the phenomena offer us.

Then what Platon, *Soph.* 229, says: “para.frosunè”, thinking apart from reality. Then we are, in Hegelian language, ‘unwirklich’, i.e. we no longer have a real reason for existence (justification) at one or more points and we fall behind the developments which ‘being’, reality, continually displays. Then we are no longer ‘reasonable’ with our subjective concepts.

Ontology as a philosophy of culture.

Mathematicians, engaged in problem solving, put the scheme “task/solution” (phenomenology/logic) first. The Hegelian concept of “real” as “what a task can handle” broadens the mathematical schema to include culture and its history.-- We explain.

1. Culture (education).

Nature’ (the given reality) as a comprehensive complex of tasks is the challenge (A. Toynbee). The culture is to grasp that nature (data and demands) and to cope with it (solve).

Learning to use a pen, to repair a water pipe, to operate a computer properly are all skills that are necessary to master tasks. He who can handle tasks proves that he/she has a grasp of reality (GG) and is able to cope with reality (GV).

That is the ontological foundation or *raison d’être* of authority: he who can handle tasks, enforces authority. That is the *raison d’être* of education: those who educate learn to grasp and cope with given reality, i.e. to be real - in the Hegelian sense.

2. Broad cultural understanding.

1.1. This ontological definition of culture (education, authority) does justice to primitive cultures. Ethnology, liberated from Western ethnocentrism, establishes that “savages” or “nature people” also grasp tasks and are “real” in this respect, capable of being mastered. Sometimes more expert than we are.

1.2. The same concept of culture gives a place to both elitist and vernacular forms of problem solving.

2. Immediately it overlays modern and postmodern solutions to tasks.

Cultural Philosophies.

Marxism stands or falls on “praxis. The pragmat(i)sm puts “problem solving” at the center. Existentialism sticks to “existing,” which here means not “actually existing,” but “actually existing as a human being in the world. As a person thrown into the world, man faces tasks. As a designer, man outlines one or another form of coping in the ‘design’.

Three approaches to “nature” or “the world”, i.e. encountered reality full of tasks (GG+GV) that find a solution in praxis, ‘solving’ or existence. In all three there is a well-defined ontology of culture. Immediately phenomenology and logic acquire a fundamentally cultural meaning.

O. Willmann's ontology.

Otto Willmann (1839/1920), in his *Geschichte des Idealismus*, (History of idealism), III (*Der Idealismus der Neuzeit*), ((The Idealism of the Modern Era)), Braunschweig, 1907-2, 1031/1037, distinguishes “the three elements of the believer’s life in the world” (o.c., 1032).

1. *Mystical (theistic)*. He also calls it “faith” (god-belief then) or “contemplative life. -- The mystical element in us pays attention to the (transcendent) ideas of God (the Biblical God) in (immanent) experiential reality. In other words, the god-believer pays as much attention as possible to how God thinks about reality in and around him.

2. *Speculative*. Also called ‘rational’ (in the sense of logically justifiable).-- The speculative element in us explores (‘Forschung’ is what Willmann calls it) reality: while living in that reality we discover it.

3. *Ethical*. He also calls it “legitimate” (“gesetzhaft”).- Life - the “act” (“die Tat”) says Willmann - that allows the mystical and the “rational” element to do justice, in competence and conscientiousness, is “legitimated” behavior, i.e., logically justified behavior. In the words of Hegel, “real behavior”.

Note -- Willmann spent a good part of his speculative life attempting to refound Hegel’s idealism on a Catholic basis.

Note -- One might use new words to label the triad of Willmann’s philosophy as “transempirical/ cognitive/ deontic.”

Willmann's three-part modernity critique.

Willmann was raised modern-rationalist but later became a Catholic.

1. The mystical in us is being relinquished by unbelieving (atheistic) rationalism.

2. The “rational” (speculative) is obscured in modern empiricism, sensualism, and materialism (all three of which overemphasize the sensuous).

3. The ethical in us is abandoned by modern autonomism (not God or objective reality but modern man autonomously decides right and wrong).

Idealism.

Willmann’s concept of culture hinges on his platonizing theory of ideas (in the patristic sense): it is the including of the three elements mentioned above.

In other words: the “real” man in virtue of exploration of reality discovers God’s ideas in it and calculates his life according to the concepts he acquires from God’s ideas.

4. This fourth section develops ontological identity theory.

In natural logic, “identity” is that which makes something what it “is,” “in itself. Something according to itself (said Parmenides of Elea). Not according to us e.g..

This makes it different - when compared - from all that is the rest of total reality (dichotomy).

Note.-- In e.g. nationalist language the difference between one’s own identity (popularly thought) and that of those who are ‘different’ is often emphasized. In psychological language ‘identity’ means that which one already living should be or would like to be so that in an identity crisis a young man does not know (well) what he should be or what he would like to be.

The identity axiom (What (so) is, is (so)) necessarily includes the inconsistency or contradiction axiom. What (so) is, cannot at the same time not be (so)) and the excluded third axiom (... there is no third possibility). That is the definition of dilemma (either-or).

Expressions such as “square circle” are in virtue of the identity axiom absolute nonsense in itself and thus even unthinkable (although pronounceable).

The term “nothing” gets its definition here.

There is absolute nothingness (which -- in passing -- is a figure of speech because it means that absolute nothingness is actually absolute nothingness),-- a term that one can utter but not think. If one does “think it,” then through all that is. Along the detour of reality -- as absent.

Conceptual realism/ conceptual nominalism.

This couple dominates the entire history of metaphysics albeit in variants. Mathematicians are also interested.

H. Ponchelet, *Mathématiques (Les sept énigmes de Paris)*, (Mathematics (The seven riddles of Paris),), in: *Le Point* (Paris) 20.05.00, 4, notes that for conceptualists (Platon, Poincaré) the objects of mathematics are in themselves (and thus discovered), while conceptual nominalists (Hilbert) consider them to be man’s “constructs” (empty shells that one fills in selfishly).

The axiom of contradiction, for example, in natural logic, is something that concerns reality in itself,--not an “axiom” that is introduced willy-nilly as one of the rules of thought.

For some, the given is there in itself with its own laws; for others, it is manufacturable and is assigned laws.

Difference/gap between ontology and professional science.

Bibl. sample: E. Treptow, *Der Zusammenhang zwischen der Metaphysik und der zweiten Analytik des Aristoteles*, (The connection between the metaphysics and the second analytics of Aristotle), in: *Epimeleia*, Munich / Salzburg,

1966.

Let us begin with concrete language. As Aristotle himself says somewhere in his metaphysics, to say of something (e.g. a girl here and now) that it is there,--that it is “being”, is to assert of it what can be asserted of all possible realities--all that is. More precisely: on the one hand one situates e.g. this girl here and now in the totality of “being” (all that is) and thereby relies on observation; on the other hand one says nothing of it which is peculiar to that girl and then one remains vague,-- one leaves open what can be said about it.

In other words: ontology asks the question “How real is something?” (to which the sentence “This girl here and now is being” answers) but it also asks the question - incidentally not without the previous question - “How is (this girl here and now) real?” The sentence “This girl is something (being)” does not answer unless in run-on (as a lemma Platon would say) to the second ontological question.

L. Decock, *Structure and ontology (Some trends in contemporary mathematics)*, in: *Tijdschr. v. filos.* (Leuven) 61(1999): 1, 139/155, at some point talks about “the ontology of mathematics” (around 1950; W.V.O. Quine). Simply put: what mathematics has as its object - numbers and spaces, structures, axioms - are not nonessentials. “Being there must be (make up) the value of e.g. a mathematical variable” (Quine).

However, the ontologist does know what follows.

There is the transcendental (all-encompassing) - one (unique) - being as a basic concept, which applies to all possible - many, indeed infinitely many - beings (things, data, realities).

One paid attention to the duality “one/many”. This is, in a sense, a mathematical concept pairing. But to deduce from this what is, for example, a variable or a mathematical structure, is impossible. There is the yawning abyss between the one all-encompassing concept “all that is” (being) and the boundless multiplicity of “all that is” (the countless beings that once were, now are and ever will be).

Conclusion.-- Ontology is the philosophical framework of a professional science but also no more. In this - meager - sense, ontology founds professional sciences.

The identity axiom.

Identity means reality proper to something as coinciding with itself. The being or essence Of something.

1. *Id.*

‘Axiom’ means ‘premise’. -- “All that is, is” (existential) and “all that is, is so” (essential). “To let being be” said Heidegger. “A fact is a fact” says the positivist.

2.1. *Contradiction axiom.*

“Something cannot be and not be at the same time” (existence) and “Something cannot be so and not so at the same time” (essence -); Other name ‘inconsistency principle’. - Thus: “This rose is red and not non-red”. The rose is either red or not red. It is a dilemma.

2.2. *Excluded third axiom.*

“Something is either a fact or not a fact” (ex.) and “Something is either so or not so” (ess.). In both cases, “ third possibility is excluded” is understated.

Meeting.

‘Encounter’ viz.” I, thou, we” confronted with something (be(de), given). Here: with the identity of reality as the subject of judgment.

a. The subject (“all that is” or “all that is”) is the original that asks for information concerning one’s own factual and essential identity.

b. The saying (“is” or “is so”) is the model, i.e. what provides the requested information (here concerning identity as fact and being).

In other words: it is not about a pure repetition (meaningless tautology) but about responding in a beam way to the claim that all that is or so is makes on us, namely to be recognized as being or so being. This presupposes in us reverence for all that is or is so. If we have respect for all that is, and are honest about it, we know in conscience, the basis of all morality, that we are obliged to say “What is, is” and “What is, is”.

The unconscious suppression of what is true is contrary to the basic axiom of ontology and logic. The negationism of the Nazis and of the Communists concerning their respective holocausts is also contrary to the basic axiom set forth above. Phenomenology stands or falls with it: what shows itself, shows itself. As being there. As presenting itself and as given unmistakably.

One sees it: the identity principle is more than an “a = a” statement. It is the basic commitment of the entire personality.

Daily life and contradictions.

D. van Dalen, *Formal Logic (An Informal Introduction)*, A. Oosthoek's, 1971, 34, says what follows.-- "Formal" here means "formalized" and "informal" means "not strictly formalized."

Van Dalen.

Formalized systems such as logistics involve the absence of conflicting axioms and derivations (theorems).

1. "In itself, a contradiction would not be so bad. In everyday life, we encounter contradictions every day. People have found an effective remedy for this: 'Just don't talk about it and nonchalantly look through the window.'

2. Science, however, which according to van Dalen - largely rests on propositional logic - , does not tolerate contradictions.

Notes.

Those who read such cannot escape questions.

1. Contradiction "in itself"-contrary to van Dalen's claim-is invariably a violation of coherent and immediately correct thinking.

In this sense she is "bad," For she opens the gate for all possible axioms and derivations from axioms that dominate everyday life. Whoever has eyes for what,-- even in our world dominated by logistics and natural sciences, occurs, can determine what the contradictions--"not so bad yet"--are leading to.

2. The axiom par excellence that underpins such a claim is nominalism applied to everyday life.

All that is, is only in itself -- "in itself" -- a vain name (Lat.: nomen);--without reality content (forma or being). Since for nominalism everything is manufacturable, such a vain, -- empty name, is an empty shell. It can be filled in, as in logistics, by one's own 'making' that has nothing to do with the given and the requested unless as malleable matter, malleable according to the autonomous will of (modern) man.

The fact that one fills in logistical symbols arbitrarily although according to 'rules' and 'laws' has an effect on paper to begin with. The fact that one fills in the data and the demanded (tasks) of daily life in the same way is subject to the law of causal processes: e.g. whoever 'fills in' fire as harmless, gets burned by it ... at least in daily life. Not on paper.

Dilemma. Trilemma.

Bibl. sample: W. Salmon, *Logic*, Englewood Cliffs (N.J.), 1953, 32/34 (The dilemma).- The dilemma is the outright application of the contradiction axiom: “Either ... or ...” (no third possibility).

1. A similar afterthought.

A sentry failed to raise the alarm. His superior: “Either you were at your post or you were not. If not, you have failed twice in your duty. If you were, you have still failed to do your duty”.

Schema: “Either p or -p”. Model or counter-model. “If -p, then r. If p, then still r”.

2. Twofold afterthought.

A person is summoned. Accused of a minor traffic offense for which he is not to blame. “Either I admit guilt, but then I am convicted for a mistake I did not commit, Either I admit no guilt, but then I still have to spend the whole day that follows in jail.”

Shine dilemma.

A true dilemma involves at least two but no more than two inconsistent possibilities. That errors are possible is shown by *Ch. Lahr, Logique*, Paris, 1933-27, 52B.

Epikouros Of Samos (-341/-271; founder of epicurean philosophy) reasoned as follows.

1. In other words, if with the dying body the soul also dies, then all emotional life ceases and one feels nothing at death.

2. Alternatively, if the soul survives death, it escapes the woes of embodied life and is happier about it than before.

Conclusion.-- In both cases, the soul has nothing to fear from death.

Schedule: same afterthought.

Criticism.

There is a third possibility! The soul survives but for reasons of unscrupulous deeds it is subject to selfish regret or even moral remorse.

Note.-- H. Arendt (1906/1975), in *The Human Condition*, accuses K. Marx of an inconsistency: he defines man as “animal laborans,” labor(st)er, but in the communist future state he defines him as radically free of all labor. For Arendt, a contradiction on a key point of Marxist doctrine.

“Square circle” as utter nothingness.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 495s.

The sentence “A square circle exists” can be spoken but not thought. Which points to the radical difference between speaking and thinking.

The proof from the absurd.

Is “incongruous” (absurd) all that is without essence and existence, i.e. non-being or nothing, cannot even show itself or be shown. Neither phenomenologically nor logically is there anything,--precisely put: “anything at all”.

Given.-- The square and the circle as ‘formae’, structures or better concepts.

Asked.-- The ontological value of the expression “square circle” or “round square”.

A.1.

Given. -- A circle is a surface delimited by a radius (identical everywhere). That is circumference

1. A square is a surface with a center point around which four equal lines making up a closed line are located. That is perimeter .

2. Both geometric ‘formae’ forms, actually ‘creature forms’ or concepts, exhibit a contradiction-free coherence. And are immediately existent. Possible. Thinkable. Something.

A.2.

Asked.-- Can both forms of being (here: geometric forms of being) exist in one? Are they not only part-identical but also total-identical.

B.

Solution -- We apply the comparative or comparative method. The inner contradiction (contradiction, inconsistency) shows itself (becomes a phenomenon, a directly perceptible thing, as it were) as soon as one compares the two outlines, as it were, and places them on top of one another. As if one tries to see them as totally identical.

1. The square exhibits only rights while the circle exhibits only curves.

2. The square exhibits rays from its center point that are unequal while the circle exhibits only rays that are equal.

The contradiction axiom says that in all cases everything that is, cannot be ‘so’ (first form of being) and not ‘so’ (second form of being) at the same time. For instance, not at the same time a curve and a straight line, not at the same time equal length and not equal length.

The concept content “square circle” is absolutely nothing. The concept scope is likewise absolutely nothing. The content of such a concept - non-concept rather - amounts to nothing. Absolutely or utterly nothing.

The term “nothing”.

Like all words, ‘nothing’ is ambiguous or rather analogous. Its basic meaning is ‘absence’ of being, of reality.

1. *The absolute nothingness*

All that neither being (essence) nor actual existence (existence) ‘is’ is absolutely nothing, i.e. nothing in an absolute or radical way.

Note.-- Just as an “empty, i.e. elementless, set is ontologically “no set,” so “the absolute nothing” is absolutely nothing. No being. An empty term.

2. *The relative or relative nothingness.*

Here the emptiness is limited.

2. 1. “*In this room there is nothing*”. Ontologically, that expression means that possible objects and persons are not there, but that there is material space (e.g., there is air to breathe).

2.2. “*The vacuum.*” Ontological: though there is no air, there is material space, room for material things.

Both cases of “empty space”: in which there is supposedly nothing, are indeed being, reality, open to filling. ‘Nothing’ means “some degree of absence” (of things, persons),--not an absolute absence as in the case of absolute emptiness.

Note.-- Dwell on a few expressions.

1. “*Out of nothing, nothing is created.*”

(except in colloquial language) - Vlad. Soloviev (1853/1900), speaking of the stages of evolution, says: “From “a + b” either a or b or a + b ‘can emerge! But from “neither a nor b” nothing can emerge”.

More precisely. Something that begins is existent only because of something that is already given (as the reason or ground of its origin).-- Hegel places at the beginning of the universe process “nothingness.” Good. But then not absolute nothingness but relative nothingness, i.e. being or reality in some initial form.

2. “*God creates out of nothing.*” Applies only to the God of the Bible. The expression means: God creates, i.e. brings into being, from nothing outside himself. He brings into being from his own inexhaustible wealth of being or ‘infinite’ reality.

The examples mentioned show that the distinction between absolute and relative nothingness, between radical and limited reality absence is decisive.

This fourth section pays attention to summarizing (summering) both inductively and deductively. Summarizing is bringing a multitude to unity or vice versa.

1.-- Summative induction.

This captures the conceptual scope.-- It starts from samples (typically inductive) in a class (distributive) or in a system (collective). The former is generalizing, the latter generalizing. The former relies on similarity, the latter on consistency.

Aristotle calls “summative induction” simply “induction” and the knowledge-expanding (amplificative) induction (from at least one to all or whole) he calls “induction by example.

Platon knew both forms of summarization very well: he called them ‘all’ (collection) and ‘whole ‘ (system). A Platonic idea, by the way, is the summary of all the copies of a class or of the whole of all the parts. She is at times the two in one.

Summering is both pre-scientific (e.g. with primitives) and scientific (in all sciences e.g.) fundamental. Man as a rational being does not want to get lost in the multitude of data but seeks to summarize them in order to control them better.

An example - very current, by the way - of diachronic summering is what is called “integral product development” (also “global product development”): one follows the creation of a product from the beginning to the end.

This is one actualization of the Platonic and Aristotelian concept of “genetic definition,” which is very much Aristotle’s preferred one.

M. Faraday and P. Atkins clarify the concept of chemical reaction (and immediately the whole of Chemistry) from one sample.

2.-- Summative deduction.

This captures the conceptual content.-- The recursive definition of integer greater than zero, the syntactic rule (e.g., the conceptual content of multiply), the mathematics with letters introduced by Fr.Viète are examples of summative deduction.

Note.-- Conceptual realists believe that summation relies on objective properties of the data. Concept nominalists see summarizing as attaching general or overall products of thought (projections) to the in itself merely loose multiplicity of data (“objects”).

Summarize (summative or full induction).

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27,591 (*Induction aristotélicienne*).--

To induce is to take samples. Summative induction is all sampling.

Example.

Listing all movable property ((in)estate) or inventorying it is summative induction.

1. Distributive (class).

A teacher improved homeworks, goes over them - one, all individually (analysis) and concludes, "I have improved them all (synthesis)." Logical: from each work individually she reasons to all collectively. Summative generalization.

2. Collective (system).

A teacher, once appointed, goes through each section of the school building separately (analysis) and summarizes, "I have gone through the whole school building" (synthesis). -- Summarizing generalization, i.e., all the sections together.

Note.-- The terms "analysis" and "synthesis" come from R. Descartes.

Understanding(s).

The teacher has formed an understanding of a class (collection) (all the works) and of a system (system) (the whole building).-- Basis: similarity and coherence.

The conceptual content is a characteristic (attribute): "I have improved" and "I have gone through".

The scope of the concept, i.e. everything that exhibits these characteristics, is either all of the works or the entire building.

Generalization/ 'Whole-ization (Globalisation).

Platon spoke of "all" and "whole. Scholasticism (800/1450) called class "distributive understanding" and system "collective understanding." In both cases one summarizes or totalizes. Does one sum (Lat.: summa) or totalize.

Aristotelian induction.

Aristotle called "induction" the complete summation. What is now called summative induction.-- It is the essential core,-- the tested essential core of the "induction by example," i.e., the knowledge-expanding or amplifying induction that goes from the summarized decision to other similar cases, i.e., from some (at least one copy or part to all copies of a system or to the whole of all parts.

One also calls this knowledge-expanding type "Socratic induction" (of which the Baconian induction is only one type, i.e., that type that refers to the connection "cause/effect"). One sees that similarity and coherence provide the basic concepts.

Summative induction with Platon.

Bibl. sample: Plato(n), Filebos 18b/d.

'Henology' is 'unity theory'.

For "them," Lat.: unum, is one. Both in the elementary sense ("Two consists of two units") and in the comprehensive sense ("Multitude exhibits unity").

That insight is at the heart of the platonic order doctrine.

One as "all" and "whole" (encompassing).-- What the later scholastics call "totum logicum" (distributive concept, collection, or class) and "totum physicum" (collective concept, system, or system), is indicated in Platon by the terms "all" and "whole.

Grammatikè (literary reading).

Summative induction shows itself in the text about the sounds of language (captured in the letters of the alphabet).

We divide in such a way that the distributive and collective sense is exposed regarding enumeration.

1. "When someone (...) took note that sound was infinite...". Here 'sound' is meant both as a class but also as a system.

2.1. "...he was the first to recognize that vowels in that infinity were not one but many. (...).That there were other sounds which, although not vowels, still possessed a sound value (*note*: semivowels). Furthermore he distinguished a third kind of letters which we nowadays call consonants".

'Sound' here is the common property, basis of the universal concept of 'sound' ('letter'), within which three private concepts (vowels/ semivowels/ consonants) are situated. That is 'all' (the collection). They are one by virtue of similarity ('one' means 'similar').

2.2. "... But he recognized that no one (...) could come to know one of them separately without all the others. He recognized, therefore, that this pointed to a coherence that made them all one".

'One' here is 'coherent' (note the dichotomy (complement) "one separately/all others") indicating coherence.-- That is 'whole' (the system).

3. "Therefore he assigned to them one science which he called grammatikè, literary literature.

One sees how a multiplicity ("infinity") becomes summarizable thanks to the basic notions of similarity and coherence, which are the two types par excellence of relation (connection, partial identity).

Summering: prescientific and scientific.

Summering evolves,-just like everything human.

1. *Prescientific.*

The German physician-nature researcher Lichtenstein (1780/1857) spent a long time in southern Africa and specifically among the Xhosa (also Xosa or Kaffirs) who now number +/- 4,000,000 in Transkei and Ciskei.

1.1. Although they have counting words, they rarely use them. Few of them count beyond 10. Most cannot even name this number.

Note.-- Some California Indian tribes did not even get that far.

1.2. According to Lichtenstein, some Xhosa possess a different type of counting and summoning. Says Lichtenstein, "Whenever herds of four to five hundred cattle are driven home, the owner notes

- a. whether animals are sometimes missing (existence) and
- b. how many and which precisely are not there (essence)".

Note.-- Apparently some owners possessed -- what the ancient Greeks called -- a "mantic" ability, i.e. the psychic ability regarding counting and summation.

Note -- Lichtenstein says "owners," i.e., people who are closely involved with their animals and thus nurture a close-to-life ("existential") relationship to their livestock. Which greatly enhances psychic ability.

2. *Scientific.*

Th. Heath, *A Manual of Greek Mathematics*, New York, 1963-2, 1, says, "The Greeks were the first to make mathematics a science."

A.N. Whitehead, *Mathematics (Basis of Exact Science, Utr./ Antw., 1965, 11:* "Mathematics began as a science when someone - probably a Greek - first attempted to prove theorems about all things and about some things."

The Xhosa owner apparently noticed from all cattle as an axiom or premise whether there were some cattle and which ones were missing. In terms of four to five hundred head! It is true that he did not formulate any propositions with proofs but he summed up intuitively, where we Westerners, after centuries of rationalism, would first have to count them accurately, make an inventory.

How did he know? Yes, how did he know? How do the Belgian pigeons released in Barcelona know which direction to fly to get home?

Integrated Product Development.

Summering occurs both diachronically and synchronically

Bibl. sample: R. Weverbergh, *Postgraduate degree in integral product development*, in: *Campuskrant* (KUL) 11.02.1999, 12.-- It is about mechanical engineering.

I. Definition. Two subterms: follow the product in its development and define it as summering.

a. Product. E.g., the creation of a telephone or personal computer.

b. Development. The most frequent type.

1. Contacting potential customers (market research).
 2. Capital formation (e.g., through loan).
 3. Creation (technical aspect).
 4. Sales (distribution) with optional after-sales service.
- Behold the factors.

II. Definition.

‘Integral’ or ‘global’ means that the postgraduate looks at “the global development of the product.” “We do not focus on any one of those factors. The full history of the product is the object.-- That is evidently summative induction.

New. Such a “global” - summative - approach does not really exist yet. At most, three colleges offer a second - cycle course.

Relying on experience. Many companies rely on routine (“It’s been like this for twenty years now”) or proceed haphazardly. The postgraduate wants a more rational stage of business.

The genetic method. O. Willmann, *Abriss der Philosophie*, Wien, 1959-5, 408/433 (*Latentes unentwickeltes Sein*), ((Latent undeveloped being)), states that something, being, e.g. here a creation of a device, can be evolutionary. It comes into being, develops, happens to decay. “Genesis te kai fthora” (arising and perishing) is an ancient Greek scheme.

Platon, in *The State* (II: 369b+) and *Laws* (III:676+) argues that the idea shows itself in the phenomena (emergence/development/decay). Thus the Greek polis that arose from the family and the primordial village.

Aristotle-- *Politika* 1: 2.-- “When one prosecutes things in their becoming from the beginning, that is the most perfect view.” Integral view of product development is apparently an actualization of that Platonic-Aristotelian basic insight,-- which in that actualizability shows its infinite viability.

“Rules with exceptions”.

Bibl. sample: I. Copi, *Introduction to Logic*, New York/ London, 1972, 81f. (*Accident*). ‘Accident’ ultimately means ‘exception!’

1. ‘Accident’.

The fallacy consists of applying a (seemingly) general rule (“law”) where it does not apply.

So *Platon, The State*

Given--A friend well in his right mind entrusts me with his weapons. Meanwhile, he loses his mind and asks for his property back.-

Asked.-- Am I, in conscience, obliged to give him back his property?

Copi. -- Many generalizations (summerings) -- according to the cognitivists folk-psychological “laws” -- are such that, within well-defined situations, they are, in English “accident”, no longer valid.

Note.-- *Platonic dialectic.*-- Ideas, once realized in the phenomena certainly, are “intertwined,” i.e. exist and apply including other ideas.

a. There is a general rule that says, “Borrowed goods must be returned.” But there is another general rule which says: “Do not give dangerous things to someone who is not in his right mind”. As long as both rules do not “cross” each other, they are valid and unconditional laws of conscience.

b. Platon’s example, however, shows the situation, i.e. the concrete circumstances, in which they ‘intersect’! Then the most important law or rule of conduct suspends the other. The other then becomes a rule or law with exceptions, accidents.

2. “Converse accident”.

Copi defines : generalize from one or a few, rather rare, ‘exceptional’ situations. Making the exceptions the rule or law.

So: opiates take away pains. That is a biological fact. In the severely ill, they take away severe, unbearable pains. They are then medically justified. Opium pushers, however, generalize to non-medical situations.

Historicity.

Platon emphasizes the situative moment: he situates the notion of “returning the borrowed” at the moment of the friend’s mind in the history of the possessor. The sense of concrete circumstances evolving is called “sense of historicity or the fact that in the course of time data change.” That they evolve.

Globalization ('Whole'-ization)

Globalization differs from generalization in that it is about a system and not just a collection.

Bibl. sample : P. Atkins, *Chemical reactions*, Maastricht/ Brussels, 1993.

“That the whole arsenal of changes in dead and living nature is a manifestation of internal reactions is certain.” (O.c., 5).

Definition.-- Starting matter, if subjected to changes in the environment (e.g., contact with another substance), becomes new matter.

That is the massive and massive subject of Atkins' book. How to make such a mastodon understandable anyway? In virtue of generalization. i.e. from one phenomenon, the reaction, design a view of the whole chemistry.

Sample.

Induction is sampling. Atkins situates the carbon atom first in “dead” nature and then in organic nature. In the latter e.g. in carbohydrate synthesis in plants and as a constituent of patterns in e.g. animal coats.

A predecessor.

M. Faraday (1791/1867) gave a view of whole chemistry from the candle flame as a sample,-- subsystem. This is one application of structural changes within the substance.

Historicity.

“Chemical reaction” is a concept. But a dynamic thing. Chemistry in its historical course shows, in endlessly varying phenomena, the real conceptual content of “chemical reaction.” Immediately the conceptual content of what chemistry really is.

Thus.-- Faraday knew that in a reaction “the properties of the substance are modified.” But Atkins, in a further phase of chemistry, talks about such changes in new terms, namely in terms of “rearrangement of atoms and electrons.” With attention to the complex energies and tunneling processes that belong to the field of quantum mechanics.

To clarify the sum (summative induction) or totality of chemistry by means of a candle flame or the role of the carbon atom is to illuminate the whole of chemistry from one part. We do not call this ‘generalization’ but, much more elegantly, ‘whole-ization’. For the whole of chemistry is revealed through one aspect.

Summative deduction.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 567.

Deducing is the reverse of inducing: from the general or overall, one reasons to the private (particular) or singular.

Recursive summering.

D. Nauta, *Logic and model*, Bussum, 1970, 64v. gives an example, namely the notion of an integer greater than zero.

The text proceeds as follows: 0 is the first integer. - $0 + 1$ is the first number to illustrate the concept. Which amounts to two samples to define.-- Next, we grasp the concept in its generality.

Forming an understanding.

In mathematics, this is often done axiomatically, i.e., by enumerating a finite number of sentences that together form a single system, i.e., a logical connection (without contradictions).

From all (numbers) collectively to each (number) individually.

One can see that this is the reverse order of summative induction.

1. " $0 + 1$ " is an integer greater than 0. -

2. " $1 + 1$ " is again an integer greater than 0.

These are two samples.

3. " $x + 1$ " is an integer greater than 0.

This is the generalization (summary), which was already at work in the two examples " $0 + 1$ " and " $1 + 1$ ". As a result, the definition becomes axiomatic, i.e. basis of further deductions.

4. Recursive.-- This process is endlessly (in principle) repeatable.--

In doing so, we represent an infinite collection of numbers.

Note.-- H. Poincaré (1854/1912) saw in the infinite set the very power of all mathematics.

x as an empty shell. 'x' is the symbolic definition for "integer greater than 0".

P. Duhem (1861/1916) tested wrong numbers (as did D. Nauta). Thus: Filling in x with $\frac{1}{2}x$ is greater than 0 but is not an integer.

Consequence: it falls outside the infinite set defined higher. Duhem calls this "a proof from the absurd".

Indeed: everything concerning numbers which is not both whole and greater than 0, is within the system defined above 'absurd'.

The syntactic rule as summative deduction.

Bibl. sample: I.Bochenski, *Philosophical methods in modern science*, Utr./ Antw., 1961, 51vv. (*Formalism*). Formalism is either arithmetic or extension of arithmetic to things other than numbers.

1. Head count.

27 x 35.-- First 20 x 35. Then 7 x 35.-- Seems little formalistic but we calculate on paper.

2. Scripture calculation.

Begin with the configuration, i.e., a set of places (open spaces or empty, fillable shells).

27
x 35

135
81

945

a. The configuration must be complete (totalization or summering). Here minimum three places for units, tens, hundreds.

b. The processing steps form an algorithm, i.e., a complete set of operations that are necessary and sufficient (summering).

Machine thinking. When multiplying, once we have the available knowledge (given, context), we do not think about both totalities mentioned above. We apply the syntactic rule blindly. "In order to calculate correctly, one does not need to know why one acts in this way. It suffices that one knows the syntactic rule (and of course some other rules)." (O.c. 53).

Syntax. Bochenski argues that "formalism" is syntax, i.e., within a configuration **a.** pay attention only to the graphical form (numbers or letters) where what those graphical forms - "blackened spots on paper" - might mean (semantically, i.e., content-wise) is put in parentheses (no explicit attention is paid to it); **b.** apply only a syntactic rule.

Summative deduction. **1.** Formalism stands or falls with the completeness of the configuration, which provides an appropriate place (empty shell) for all graphic forms of operations. Thus one deduces summatively. Without thinking about it.

2. Formalism stands or falls on the completeness of the syntactic rule, which must have no exceptions. One deduces summatively.

The two together **a.** configuration and **b.** operation algorithm make combining out. Syntax makes such combining possible.

As an aside, even Bochenski does not dwell for a moment on this dual structure. The structuralists and combinatorialists do not forget this.

Letters as summerings.

Beginning with a schedule.

Linguistic model	Figure model	Letter model
The sum of two numbers	$4+3=7$	$x + y + z$
verbatim models	figures as models	letters as models
non-operative	operative but	And surgical
but universal	not universal	And universal

The use of models.

What we think in our mind is invisible but becomes visible in the linguistic model “the sum of two numbers.” A model provides information,-- here about what goes on inside us, i.e. the original in our mind.

But mathematics especially needs more useful models. This happens in two ways. Because mathematics - like e.g. logistics - wants to be operative, i.e. to perform operations smoothly.

The Revolution of Fr. Viète (1540/ 1603).

Bibl. sample: O.Willmann, *Geschichte des Idealismus*, III (*Der Idealismus der Neuzeit*), Braunschweig, 1907-2, 48ff..

1. The middle ages calculated with numbers (“logistica numerosa”). Thus e.g.: “ $3 + 4 = 7$ ” Platonist as he was, Viète (Vieta) introduced ‘species’, ideas, i.e. general concepts which summarize. He projected them into an appropriate model, namely letters (“logistica speciosa”). These letters literally anticipate all possible figures and are a deductive summering.

2. Viète applies a typically Platonic method, the lemmatic-analytic method. A lemma (prefix) is a provisional designation for an unknown, e.g. x . Once this is available, one can proceed with the analysis, reductive reasoning. In other words: one **1.** pretends that the unknown was already known. And **2.** one traces its conditions.

Note -- I. Bochenski, *Philosophical methods in modern science*, Utr./ Antw., 1961, 55v. (Eidetic and operative sense), says what follows.

A symbol - e.g. 3 or x - has eidetic or semantic meaning (one knows what it means) if one knows what it refers to. A sign has operative meaning if one uses it logically without knowing what it refers to. As e.g. in arithmetic. Viète’s revolution opened the way for the modern form of ‘operating’.

5. This fifth section is a harmology (order(s) theory).

1.1. Ordering is bringing together a multitude into a unity ('putting together') on the basis of connections (similarities and connections).-- This puts configurations first, i.e. places with an ordering rule.

Combinatorics is the placement ("situating") of data within a configuration. Examples include systechy (opposition pair), differential, semantic differential, rule of three.

1.2. The method is compare, i.e. think data including other data. Not to be confused with "equating. There is internal and external comparison. There is qualitative (e.g., in the form of a differential of jumps) and quantitative (e.g., through measurement models) comparison.

There is distributive and collective comparison (paying attention to classes (collections) and systems (systems)).

Structure (central to structuralisms) is configuration. The terms "and" and "or" in the vernacular as ordering terms.

2.1. There are basic configurations.

Distributive all yes/no all yes/no all no (none).

Collective: totally yes/not totally yes/not totally no.

2.2. These basic configurations reflect partial identities.

From there, the basis: identity theory.

To order is to presuppose the total identity of something with itself (its singularity) (one says aristotelically: its "substance") but also to extend them to partial identities (analogies, relations) of something with something else.

Again: analogy is the presence of partly identical partly non-identical. There is similarity identity ("This is an apple") and coherence identity ("These apples are healthy") of something with something else.

Conclusion.-- Natural logic thinks identitively, i.e. in terms of total and partial identity. Not of total identity alone as is more often thought. Euler's models as depictions of partial identities.

Again: conceptual realistically, identity (total or partial) is an objective reality; conceptual nominalistically, it is a projection of a thinking subject into an "object" without objective identities.

Harmology (order(s) doctrine).

‘Harmologeïn’, Lat.: ordinare, to order. Fitting together to form ‘harmonia’, joining together. In virtue of similarities and connections (links).

Ontology.

“The whole metaphysics of the West, from Platon to Nietzsche, can be interpreted from the concept of order(ning). Every Western system would then come across as a type of order(ning) thinking.” (F.Schmidt, *Ordnungslehre*, Munich/Basel, 1956, 11).

E.Beth, *The Philosophy of Mathematics*, Antw./Nijmeg., 1944, 102vv, mentions the mathesis universalis, the comprehensive mathematising theory of order, of R. Descartes and o.c., 141, the non-mathematical theory of order of German idealism (Fichte, Schelling, Hegel).

Hegel situates dogs and cats or penholders within the living whole as he defines all that was, is now, will ever be. That living whole is the all-encompassing configuration with its ‘places’ in which everything can take its place and meaning as accounted for (‘wirklich’), as ‘reasonable’ or ‘rational’.

S. Augustine of Tagaste (354/430).

In his *De ordine* (On order), he designs a first explicitly formulated order(s) doctrine.

A multitude of data (geometric, musical, astronomical, numerological, i.e. the data that the paleopythagoreans incorporated into their theory of order) each time reflect one type of ‘arithmos’, Lat.: numerus, understand : order or structure. In virtue of similarity or coherence.

Combinatorics.

“To order is to place equal and unequal things so that each occupies its due place.” Thus says S. Augustine who thereby quotes Cicero (-106/-43) literally.

“To combine is to place data within a set of places.” (*C.Berge, Principes de combinatoire*, Paris, 1968).

As an aside, G. Leibniz published his *De arte combinatoria* (Combinatorics) in 1666.

Configuration. A set of places is called “configuration! For example, a housewife assigns places to her linen in a closet, i.e., a configuration.

Thus, at the Flood, Noë (Noah) gave all living things linked a place within the ark, a configuration.

The verb “to situate something” that intellectuals use so often is the verb par excellence that presupposes a theory of order and combinatorics.

Configurations. As A. Guzzo, *Le concept philosophique de 'monde'*, (The philosophical concept of 'world'), in: *Dialectica* 57/ 58:15 (13.03; 1961/ 15.06.1961, 97ss., emphasizes, the concept of world (universe) is central to Platon and he defines it by means of 'all' and 'whole' (collection and system). To order is to block a world (= configuration).

Systechy and differential. A systechy (Gr.: su.stoichia) or pair of opposites is a configuration with two places in which opposites are situated. Thus e.g. "icy cold/ stitching hot". A differential is a set of places such that between the extremes or opposites intermediate values can be located. So e.g. "freezing cold/cold/hot". In other words: gradual quantitative changes (differences) show qualitative jumps. One of the axioms of the Hegelian and Marxian dialectics.

Semantic differential. 'Semantic' here means the content attributed to a concept in its variants. Ch. Osgood, *Psycholinguistics*, Baltimore, 1954, introduced this notion of 'differential'. D. Fontana, *Introduction to Pedagogical Psychology*, Nijkerk, 1978, 75, gives an application of this to children. For example, the children are asked to qualify "the person I am" using the following semantic differential.- Following each trait (concept), a child is asked to situate ('score') him/herself on this seven-point scale

Strong								Weak
Sad								Happy
Fair								Unfair
Cruel								Friendly
active								passive

by means of a cross. In this way one gets a profile or trait description which thus forms a unit. Namely a profile of the self-image of a child. Fontana also proposes to elicit a profile of "the person I would like to be".

Note.-- The rule of three.-- This is a differential. Its basis is the universal set

100%	---	30
1%	---	30/100, i.e. 3/10
15%	---	15 x 3/1 i.e. 4,50

"100 %" "all"). 1 % is one copy of it (singular). E.g., 15 % is a private collection.

All hundredths are qualitative jumps within a gradual series of changes or differences.

Comparative (comparative) method.

Being, i.e. overall reality, is full of relations (relationships). The method of exposing relations (making them a phenomenon) is comparison, i.e. data including other thinking.

Note: everyday language often confuses ‘compare’ with ‘equate’ but ontologically the two are distinguished. To compare is to pay attention to data (Given) in order to see relations between them (Asked).-

As an aside, partial identities (analogies) and non-identities are relations.

1. Internal and external comparison.

H. Pinard de la Boullaye, *Etude comparée des religions*, (Comparative study of religions), II (*Ses méthodes*), Paris, 1929-3, 40, 87.-- One pays attention to relations within e.g. a religion (unraveling its structure) or to relations outward (e.g. with the rest of culture).

2. Qualitative and quantitative comparison.

Qualities are amenable to comparison. The differential “not/ somewhat/ fairly/ very”, expressible from e.g. warm, strange and other qualities, shows it. The “fuzzy logic” pays attention to such nuances varying from 0 to 1.

Quantities.

H. van Praag, *Measuring and comparing*, Teleac/ De Haan, 1966, 24, says: measurement is comparison of magnitudes. One thinks of the original (the thing to be measured) including a model, e.g. a meter. Thus one can speak in terms of meters (the measurement model) about e.g. the height of a church. That model provides quantitative information.

3. Comparison Grades.

“What is indistinguishable is identical” said Leibniz (“*identitas indiscernibilium*”). Thus two “identical” linden leaves.

Kant responded: (in the name of total identity) even if they look totally alike (geometric shape), yet they are in different places (they exist apart).

In other words: to compare thoroughly is to pay attention to more than views (place, time, biological cells etc.) notice.

4. Distributive and collective comparison.

This is looking at similarity (the basis of class or set) and at coherence (the basis of system). This extremely important type of comparison we shall further tackle much more thoroughly: it is the basis of reasoning e.g. or even of judgments,--yes, of a classification of concepts as natural logic has known them for centuries.

Structure.

Sample Lupasco, *Qu'est-ce une structure?*, (What is a structure?), Chr. Bourgois, 1964, notes the use of this term amidst a multitude of meanings. As a definition, he gives "the way in which the parts of a whole are placed among themselves." Again: configuration.

Structuralism.

Structuralism originated in Moscow (1915) and Petrograd as "Russian formalism," moved to Prague (1926), to Copenhagen (1931) and New York (1934),-- hit Paris. Roman Jakobson (1896/1982) is known as the central figure in the Moscow linguistic circle.

As an aside, language - phonological understanding - governs structuralism.

Note.-- The semiology' (theory of signs) of Ferd. de Saussure (1857/1913), set forth in his posthumously published *Cours de linguistique générale* (General linguistics course), (1916) exerted great influence. The connection "expression (signifier: signifiant (Sa))/content (signified: signifié(Sé))" governed Saussure's linguistics together with the notion of 'language system'.

J. Broekman, *Structuralism* (Moscow/Prague/Paris), Amsterdam, 1973, defines "structure" as "a set of relations between either elements or elementary processes.

Where elements, or elementary processes form a totality (i.e. class or system), structures arise whose construction exhibits certain laws (immutable relations). Such a totality Broekman calls "a system".

C. Bertels, Michel Foucault, in: *C.Bertels/ E. Petersrna, Philosophers of the 20th Century*, Amsterdam, 1972, 211, defines, in Jakobson's sense, structure as "a totality of permanent relations between interchangeable elements of a given repertoire" ('repertoire' is either collection or system).

Note.-- L. Decock, *Critical study (Structure and development: some tendencies in contemporary mathematics)*, in: *Tijdschr.v. Philosophy* 61 (1999):1, 150/154, argues that a structuralism prevails not only in the human sciences, as has been claimed, but also in the current philosophy of mathematics.

Final sum.-- The time-honored concept of structure, i.e., network of relations (partial identities), received a revival and updating in structuralisms (there are many).

'And' and 'or'!

A theory of order must be concerned with the connections exhibited by language. A. Tarski, *Introduction à la logique*, 1971, 17, speaking of “propositional arithmetic” (for the title “logique” means “logistics”), says that logistics is concerned with terms such as “and,” “or”--also with “not” (negation), “being” (establishing “being”), “all” and “some” (to say nothing of “if, then”).

With K. Döhmman, *Die sprachliche Darstellung logischer Funktoren*, (The linguistic representation of logical functors), in: A. Menne/ G.Frey, *Hrsg., Logik und Sprache*, (Logic and language), Bern/ Munich, 1974, 38ff.. , we briefly dwell on ‘and’ and ‘or’ as being of importance to a harmology (theory of order).

1. Conjunction ('and').

“Something and something else”. “Both the one and the other”. “Not just but also ...” “Both both something and something else”. -- So: “Be man and one appreciates you”.

2.1. Disjunction ('or').

“Something or other.” In the sense of “at least one of the two”.

Thus: “One of you two will pay me”. “Your money or your life!”. “.... or rather”. “Give me seven or eight”. “In other words” “Resp.” (for “respectively”). “ ... and/or ...”.

2.2. Exclusion (or).

“Something or other but at most one of the two”. “One or the other or neither(n) but in no case both(n) at the same time”.

To a soldier at fault: “Either thou wast at thy post or thou wast not (or neither but in no case neither at the same time).

2.3. Contravalence ('or').

“Only one of both(n)”. “Either something or something else (but not both(n) at the same time nor neither(n))”.

Note.-- Latin had for this contradictory opposition (“Something cannot be (so) and not be (so) at the same time”) the term ‘aut’. This is in contrast to the term ‘vel’ which applied to all other opposites.

Behold a sample of the ordinary and therefore natural-logical language concerning ‘and’ and ‘or! It is good to recall the aspects of reality which the language of common sense already clearly knows, now that we are dealing with the ‘ordering’ of data. In any case: also the common sense, without any logical training, knows perfectly well the terms that concern ordering.

Basic configurations.

J. Royce, *The Principles of Logic*, New York, 1912-1, 1962-2,9, says that logic is only “a very subordinate part” of the science of order (“the science of order”). This is evident, among other things, from what follows.

The basic differential.

Identical ordering hinges on total identity/ deed identity (analogy) / total non-identity.

1. Distributive.-- The configuration looks like this.

All well	All non (none)	The structure or order is clear: all yes/no all (some, at least one) do all not (none)/ not all not.
Non-all are (some do)	Non-all non (some not)	

In scholasticism (800 /1450) this structure is typical of “totum logicum” collection (class), denoted by ‘omne’, the Latin for the platonic ‘all! As a distributive-common property, e.g., the term ‘man’ is spread over all specimens (‘elements’).

2. Collective.-- The configuration looks like this.

Totally yes (all portions do)	Not at all (all portions not)	The structure or order differs from the previous one.
Not-quite so (some portions do)	not at all (some portions not)	

In scholasticism this structure is typical of “totum physicum”, system (system), denoted by ‘totum’, the Latin for Platon’s ‘whole’. As a collective-common property, e.g., the term “the whole man” or also “all mankind” (as a collective entity) is valid.

Similarity/Coherence. The first logical square aims at what is the same in a multiplicity of instances : all people resemble each other. The second square aims at what is the same in a multitude of parts (subsystems), namely the one coherence. All parts of the whole human being, whether they are equal or unequal, hang together.

Note.-- The term ‘square’ in the expression “logical square” comes from the fact that instead of a configuration being a differential in line’ form a square arrangement of places is used. Both have their advantages and disadvantages of course. This page is fundamental to the whole of natural logic.

“I think. I operate on language”.

Calendar humor.

A friend visits with a priest the remote sanctuary it serves, “Surely they can’t all get in there!” “Indeed: if they all come, they cannot all get in. But, since they never all come, they can always all get in”.

This is an application of combinatorics, configuration science.

1. *Classes.*

Two classes (sets), i.e. concept sizes, are discussed:

a.1. the general (universal) class of potential churchgoers and
a.2. the special (private) class of actual churchgoers and b. the class of places in the church.

2.1. *All.*

A closer look reveals that the same word sound, ‘all’, denotes both the universal class and the private class.

This is a blatant violation of the law of identity which, at least in scientific and philosophical language, demands that the same, word sound within the same context cover the same, i.e., identical, meaning.

2.2. *Being able to get into it.*

The confusing word usage thus established, ‘all’, runs in tandem with the notion of ‘(being) able to get in’. After all, the sanctuary is a configuration, i.e., a set of places, fillable with the class of potential or not potential churchgoers.

This is the combinatorial aspect of humor.

Humor.

This stands or falls precisely with the infringement of the identity law on strictly one-syllable use of words. Although a serious infringement, even the working-class man understands the “taste” of humor. Strictly collectively, the class of potential churchgoers exceeds that of actual churchgoers and only this one “always gets in.” I think but I use language.

Language analysts and cognitivists readily argue that language and thinking are identical. “No language no thinking”.

There is truth in that: teach someone a new word and his thinking changes.

However, there is also untruth in this; if our thinking were to coincide with the above humorous words, how could humor be grasped and tasted as a deviation from correct thinking? Our mind transcends (transcends) the sounds of words (among other things because it thinks including the unsaid) as it uses matter and among other things our brain as a substructure.

Identity.

1. Harmology assumes something (being). That is of its identity. And that is of its total identity with itself. Total identity, as a singular identity, reduces something to itself,--as one with itself.

2. Harmology extends identity to the partial identity (= analogy) of something with something else. One name for partial identity is “common property.” Another name is “relation” or “connection.

Short: something including something else.

1. *Similarity Identity.*

Model.-- “This (total identity) is an apple”. The sentence situates the apple within the collection (class) of “all” apples. By virtue of similarity or commonality with the rest (dichotomy or complement). This apple is part-identical, as a copy of the collection, with that rest.

This type of analogy is distributive, because the common property is spread over the entire set of apples.

2. *Coherence Identity.*

Model.-- “These apples are healthy”. “These apples” as a subject is the total identity. By “are healthy” they are situated within the whole which is the causal link between eating apples and health, i.e. within the dynamic system “health through apples”.

By virtue of coherence or commonality with the rest of the whole coherence (dichotomy or complementarity). These apples, as part (subsystem) of the whole (system) “health-by-eating-apples”, are part-identical with the rest.

This type of analogy or partial identity is collective, because the common property is one part of a whole, in unison with the whole causal process.

This page, in fact, repeats what has been assumed throughout the entire course. It is the basis of everything that follows. It shows that ontology as harmology is above all and logic - natural logic then - identitive, i.e. stands or falls with full identity and shared identities.

Or if one wants: the total identity of something with itself (‘substance’) thought together with the partial identities (relations, connections) (‘accidents’).

Euler's models.

L. Euler (1707/1783) designed circles as models - not of total but of partial identities and non-identities.

Ch. Dodgson (1832/ 1898; *The Game of Logic* (1886), a logic for children),-- later J. Venn (1834/1923: Venn diagrams) visualized partial and absent identities. Total identities are indistinguishable as a drawing

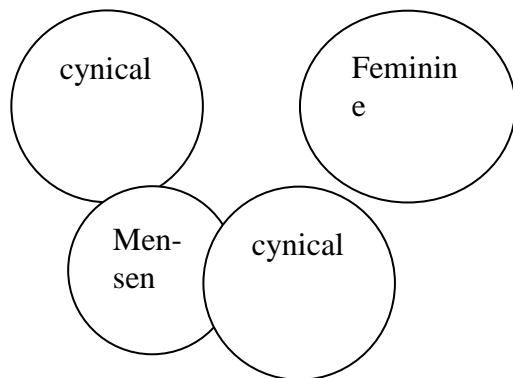
(Total) non-identities.

VZ1: All cynical people are non-lovable.

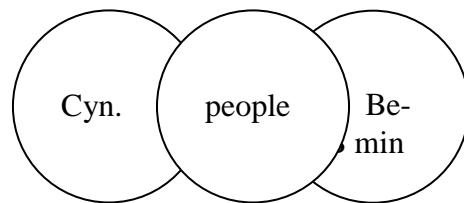
VZ2: Well, some people are cynical.

NZ: So some people are non-lovable.

The contents are "cynical" and "amiable" and the encompasses are "all" and "some."



Some people are cynical
(partial identity)

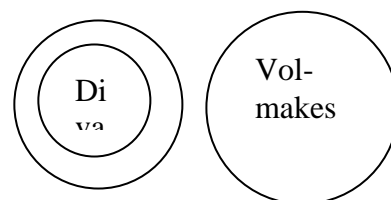
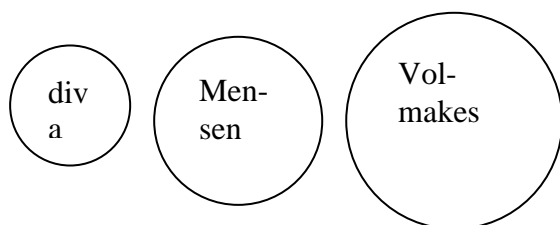


All cynical people are non-lovable
(total non-identity).

Some people are cynical (partial
identity)

Some people are lovable (partial
identity)

These visualizations are limited to the magnitudes 'all' and 'some' Let us now look at how visualizations look when as magnitude also the singular case is depicted.



people

Prephrase 1 : All people are non-perfect.

Prephrase 2 Well, that diva is a human being.

Postphrase: So she is non-perfect.

The originals are the concept contents and the concept dimensions. The models are the circles and their proportions. For they provide visual information about the originals which are represented in them. Partial identity and non-identity can be represented separately. Total non-identity.

6. The sixth section is an analogy.

1. Any model theory compares the total identity of something with that of something else and establishes partial identity (analogy). There is similarity - or proportional analogy: such as rooster/ hens (metaphorical model) so Jantje/ children (original). There is coherence-or attributive analogy: like cause/effect (metonymic model) so fire/smoke (original).

2.1.a. Tropology.

Once the comparison, basis of analogy, is pronounced abbreviated (concealed), there is transfer (trope).

The reed (map) is metaphor in virtue of similarity for a type of woman (landscape). Apples (signpost) are metonymy in virtue of consistency for health (path to follow).

In geometry, within a triangle, equal sides go together with equal angles that are metonymic signs for those sides.

2.1.b. Axiological tropology.

Our mind as a sense of value is usually also transitive because it is sensitive to relationships: one destroys the portrait of the patron out of anger because it resembles him; one smashes his windows because they are related to him.

Again: metaphoric and metonymic model.

Primitives in their dynamism (life-force belief) set as axioms equal-niss sympathy and coherence sympathy between things and arrange their magical acts (deductively reasoning from that axiom) on the model of those sympathy types. They too reason “logically” but from partially different axioms than ours, the Western ones.

Theological speech - about God, for example - appears analogical to those who listen to it: one does not forget that a sacred experience (in which God becomes a phenomenon in any case) lies at the basis of theological analogy (“God is my shepherd”).

2.2. The synecdoche is that trope which the class or system abridges and in its reductive forms it exhibits generalization and generalization.

Thus the doctrine concerning the tropics becomes sensible, i.e. logical,--at least according to natural logic.

The two main types of analogy.

“The analogy is the pivot of the model concept”. (K. Bertels/ D.Nauta, *Introduction to the model concept*, Bussum, 1969, 31). Better said, “And the total and the partial identity (analogy) are the pivot of the model concept”.

The original is that which asks for explanation (information). The model is that which explains,-- provides information.

1. Total identity.

The identity axiom - “all that is (so) is (so)” - is a judgment in which the subject is original and the proverb is model. Since the subject asks for total identity, the proverb answers with total identity.

E.g. “a = a” or “a is a” are applications of it. Every definition is an application of it. Every definition is an application of it.

2.1. Partial identity (analogy).

The diagram: cockerel/chicken = john/children. Also called “proportional analogy”. Comparative: “As the rooster goes before the chickens, so does Johnny go before the children”.

Metaphorical model.

The comparison, once shortened, becomes metaphor: “Johnny is the rooster - ahead of the kids.” Jantje is original. The rooster is model. Both under point of view of social role (leading). That is both common trait (partial identity).

Although diverse, the metaphor identifies both under one point of view. They belong to one and the same, identical collection (preface).

That’s similarity analogy.

2.2. Partial identity (analogy).

The schema: cause/effect = fire/smoke. Also called “attributive analogy”.

Comparatively, “As cause stands to effect, so fire stands to smoke.”

Metonymic model.

The comparison, once shortened, becomes metonymy in this case. “Where there is smoke, there is fire” or even shorter “Smoke is fire”. For “Smoke is the consequence of fire”. Smoke as an original is asking for its cause. Fire as a model is that cause. The system “fire-as-cause-of-smoke” is both common property (partial identity). Fire and smoke are identical under one point of view: they belong to the same whole.

This is coherence analogy.

With model theory - better “original/model theory” - part identity and tropology (metaphor/ metonymy) go together. They illuminate each other, i.e. they provide information for each other. Are each other’s models.

Tropology : metaphor (similarity transfer).

'Tropos', reference.

Something (original) is known, valued, and expressed in terms of that other with the inclusion of, with the co-appreciation of, something else (model). -- "If b is thought of by a, then b is an association of a". Association is at work in the tropics and it is on the basis of similarity or coherence.-- On this the comparison rests. Once abbreviated, the equation becomes a trope.

Metaphor.

'Metaphor'. parable transmission.-- "That woman is a reed" or "A reed of a woman". "A chink of a guy". -- By resemblance, the metaphor partially (analogy is partly resemblance partly not - resemblance) identifies the woman with a reed.-- Comparison. Just as a reed folds, moves back and forth because of circumstances (the wind or a passerby), so too is that woman folding, affected by circumstances.-- Association.-- When one thinks of that woman, one thinks of a reed.

Shortening. The trope, here: metaphor, only begins with the abbreviated expression. Identically, one says "That woman is a reed". The 'is' means "is under certain point of view" (which is clear from the context).

Schedule. There is a common feature (partial identity, analogy), i.e. accentuating style.

Reed	<u>Woman</u>	The influenceability by circumstance. The abridgment of comparison and association that the transfer establishes causes comparison and association to weaken from the text (but not from the underlying thought or feeling).
Influenced	Influenced	
<u>(physical)</u> model	<u>(psychological)</u> original	

But as a language it becomes a collection.

The pliability is spread over women's reeds. Both belong to the same collection.

Skirt chaser.

As the hunter hunts hares, so a man hunts "skirts" (metonymy for women-in-bed).

Metaphorical sign.

A map as a likeness of a landscape is a metaphorical sign of that landscape: its structure, reduced, provides information about the landscape it depicts and is a model of it. Now: a sign is more manipulable than it means because one puts the map in the car for example, not the landscape.

Tropology: metonymy (coherence transfer).

Systems theory.

A system can be physical (crystal), biological (flower, animal), human (child), psychological (belief), sociological (group), cosmological (constellation). A system is a whole of which the parts (aspects) - mutually equal or not - resemble each other under one point of view: together they are one whole, one coherent whole. That is their common characteristic (part identity) which is not distributive (spread over a multitude of specimens) but collective.

Dynamic system.

A ‘kinèsis’, Lat.: motus, process, is one continuous set of changes. The distinguishable phases are not separated. Together they make up one coherence. Thus e.g. an algorithm.

Metonymy.

‘Metonumia’, name change, correlation transfer.-- “Apples are healthy”. “Those healthy apples!”. – In virtue of coherence, the metonymy partially (analogy) identifies apples with health.

Comparison.-- Just as a factor (partial cause) also causes an effect, so too (eating) an apple also causes (with other foods and beverages) health.-- Association.-- Because of that causal connection, an association “apples / health” arises. -- Abbreviation.-- Identically one says” Apples are healthy” or “Those healthy apples anyway”. Where “are” means “are healthy via causation”.

Schedule.

Again that proportional structure but now referring to the dynamic

<u>factor</u>	<u>apples</u>	system that is sanitation by apples. The
consequence =	health	partial causation (apples are just one factor) is
-----	-----	assumed unspoken and the whole equation
model	original	(o.k. the context) (of which the diagram on
		the right) is said to be abbreviated.

Skirt chaser. In that word, “skirts” is metonymy: the skirts do not resemble the women who wear them (one system) but are related to them. There is not distributive but collective connection.

Metaphorical sign. A signpost does not resemble the landscape but is related to it. It is a metonymic sign and metonymic model part of it provides information about the landscape. The names or designations on it refer to a possible destination. This is an essential aspect of the signpost : the name is a sign for something.

A collective structure.

Bibl. sample: D. Mercier, *Logique*, Louvain/ Paris, 1922-7, 177/185 (*Nature et fondement du syllogisme*).--"If VZ, then NZ. Well, VZ. So NZ".

Geometric model.

All triangles with two equal sides necessarily exhibit two equal angles. Well, this triangle abc has two equal sides. So abc exhibits two equal angles.-- The geometric proof is provided by the geometrists.-- Here is what concerns us here.

1. Deduction.

The general concept of ABC, triangle, pictures itself in this singular-concrete triangle abc. This applies from rule to application. Modal : necessary derivation.

2. Metonymic model.

Within the triangles ABC, however, a different type of connection prevails.-- As soon as a triangle with two equal sides is put forward as the subject (original) of a sentence, one is compelled to assert in the saying (model) that it has two equal angles.

In other words:

two equal sides - the original - image at two equal corners - the model. - Not because the sides resemble the corners (that would indicate a distributive relationship). But because they are related to them. Which indicates a collective connection. The corners are at once a metonymic model of the sides.

Summative deduction.

Mercier as a formal logician observes that the connection "sides/angles" is everywhere and always there. Whether purely imagined or materialized (in wood, in ink on paper, in chalk on the blackboard) triangles are involved,--whatever the length of the sides and the width of the angles may be;-- invariably the connection is there. The proof of the connection is a summary of all possible cases of triangles. It is a case of summering.

Metaphysical comment.

For the abstractionist (Aristotle), such a thing is an objective structure which our mind, which is detached from the singular-concrete, 'sees', 'bloots'! For the ideationist (Platon, Hegel), in every triangle abc the universal triangle ABC is present in precisely one of its 'images' (achievements, samples) whereby the singular-concrete realizations exhibit the infinite richness of the idea triangle ABC "from something eternal."

Axiological tropology (as if-valuation).

Bibl. sample: Th. Ribot, *La psychologie des sentiments*, (The psychology of feelings.), Paris, 1917-10, 171/182 (*Les sentiments et l'association des idées*).

Ribot (1839/1916) shows how our mind as a sense of value (axiological aspect) values something including something else and expresses it in terms of that other. Also mind is transitive. If b is thought of with a and b is valued, then b is an axiological association of a. It too can be expressed in shortened terms (trope).

1. Equivalence Rating.

For a young man, if he resembles her son (identically according to age and so on), a mother feels within herself the same or at least a related (analogous) feeling of sympathy arise in him she appreciates her son. It is as if he were her son.

2. Coherence Rating.

A lover in love passionately feels eroticism for the person of his mistress. If he sees or thinks about her clothes, her perfume, her furniture, then by coherence he transfers his eros to everything that belongs to her. This can be called 'fetishism'. The same feeling arises as if it were the lover herself: in what is hers, he appreciates her.

Transfer.

We still listen to Ribot.

1. Metaphorical sign.

The young man by resemblance becomes the sign that refers to her son and summons the son. Ribot speaks of "likeness transfer" ("transfert par ressemblance").

2. Metonymic sign.

The clothes and such of the beloved in virtue of coherence are signs that refer to and evoke the lover. Ribot: 'coherence-transfer' ("transfert par contiguïté", literally: in virtue of 'adjoining', coherence).

Emotional states.

The mental life, once emotional, sees signs: let us think of the rituals at manifestations : one smashes the windows of the patron (the windows are connected with him); one tears his portrait (the portrait resembles him).

People - human experts and also psychologists - know the phenomenon of transference very well. However, the emotional-tropological 'confusion' (identification) "model/original" becomes translucent, understandable, as it were, only thanks to identitarian ontology and natural logic.

Similarity and coherence in primitive thinking.

Bibl. sample: G. Welter, *Les croyances primitives et leurs survivances*, (The primitive beliefs and their survival,), Paris, 1950.

The author mentions L. Lévy-Bruhl (1857/1939); *La mentalité primitive* (1922)) who, after more thorough study, no longer dared to dismiss primitive mentality as “prelogical”: primitives reason like us but starting from partially different axioms.

Perhaps the most important axiom reads, “A what is real is bearer of life force.” That is why higher beings are worshipped: they possess a higher life force (‘fluid’). -- This way of thinking is called ‘dynamism’.

Similarity and coherence.

J. Frazer (1854/1941; *The Golden Bough* (1890) places “sympathy” (from the Greek “sumpatheia,” relation between life forces) at the center. That sympathy or interaction between fluidic (rarefied or particulate) realities exhibits two types.

1. Similarity.

Something shows sympathy with something similar.- Latin: “Similia similibus”, the like through the like.-- This belief leads to imitation or imitative magic or avoidance.

Note -- ‘Taboo’, i.e. to avoid, is something (object, landscape, plant animal, human, invisible being) that deprives you of your life force and immediately your happiness (sickening, creating miscalculations e.g.). This is called “tabooism” or avoidance belief.

Model.

An infertile woman makes herself a “doll” that represents (“imitates”) the baby she wants, gives them to suckle (ritual) as if the baby were already there (positive thinking).- - The doll resembles the baby and gives contact with higher fertility-giving beings (fertility deities e.g.).

2. Coherence

Something shows sympathy with something related to it.-. This belief leads to touching or contagious (also ‘homeopathic’) magic and tabooism.

Model.

A barren woman borrows the clothes of her childbearing burin, puts them on and thus appropriates through contact a part of the burin’s life force under the guidance of higher beings. In the belief of becoming co-fertile herself (positive thinking).

The sacrifice of gifts is of the same cohesive nature: one gives something with life force in order to receive a higher life force in return from a higher, more lent being. Now that is primitive mentality, i.e. applied logic.

Analogical reasoning and direct knowledge.

Bibl. sample: J.F. Harris, Jr., *The Epistemic status of Analogical Language*, in: *Internat. Journal for Philosophy of Religion* (The Hague) 1:4 1970: Winter, 211/219.

Harris' thesis is: "Only if something 'literal' (op. :directly experiential) is known about X, is any analogical speaking about X justifiable."

He mentions in this regard W.V.O. Quine, *Word and Object*, New York, 1960, 15: "Analogy in its basic sense is talking about things already known outside analogy."

Also W. Blackstone, *Religious Language and Analogical Predication*, in: *The Iliff Review* XVII: 2 (1960: Spring), 24, states: "If concerning God (or any other object) one must know something by analogy, then one must know something of God (or any other object)."

Note -- In other words, direct knowledge -- e.g., concerning God religious experience (God contact) or e.g., concerning consciousness experience of consciousness (lived through it yourself and expressed) -- is an absolute condition for being able to speak analogically, i.e., comparatively, about something. If there is comparison, there are at least two terms that one knows and compares directly. Not one (where the other would be totally unknown)!

Harris starts from religious expressions like "God is my shepherd" or "God is infinitely wise" or even "God is the first (understand: fundamental) cause". How would one sense God as shepherd if one knew nothing shepherdly (as a phenomenon) directly from God?

Theological Speaking.

Harris sees three types. One can speak of God anthropomorphically (but then one reduces him to something creaturely). One can do it "holistically" (but then one says nothing about him because he is too different).

One can do it sensibly, i.e. analogically: then one recognizes both the comparability (something anthropomorphic) and the non-comparability (something sacred-silent). God is like his creatures but not whole and entire. He is not like his creatures but not whole and all: partly identical partly non-identical.

Behold, in a nutshell, something about the essence of speaking about God (at least the Biblical, transcendent God).

Tropology : synecdoche.

Bibl. sample: K. Krüger, *Deutsche Literaturkunde*, Danzig, 1910, 115.

The term “sun.ek.dochè” means “suddenly taking hold of something”, suddenly taking what belongs to it.

1. Metaphorical synecdoche. (distributive)

“A soldier remains at his post” says the commander to all the soldiers before him. He does say ‘one’ (model) but means ‘all’ (original). “A teacher is never late” says the barmy principal to a tardy teacher. He says ‘one’ but apparently means ‘all! Likewise vice versa : “Teachers are not late” said to one tardy teacher.

2. Metonymic synecdoche. (collective)

“The beard is there.” Says the staff when the boss arrives. They say “the beard” (the part as model) but mean the boss (the whole as original) .-- The German poet Schiller: “We beg for a hospitable roof” (the part for the whole house). -- “One could walk over the heads”, the part for the whole, the people. Similarly, “A parish with so many souls”.

Copy/ collection or part/ whole.-- Or the reverse.

The metaphorical synecdoche means in one copy all copies, or vice versa. The metonymic synecdoche means in a part the whole (system) co- or vice versa.-- ‘Synecdoche’ is sometimes translated by ‘co-meaning’ or ‘co-meaning’.

Trope.

One thinks of something (copy/class or part/whole or vice versa) including something else related (similarity or coherence) to it, and expresses it in terms of that other which after all belongs to the same being. Part identity or analogy. The shortening in pronunciation leaves the connection unspoken because it is apparent from the whole context and sensed as superfluous (pleonastic, redundant, redundant). It is a trope. Immediately a figure of speech.

Note.-- Krüger.-- The allegory (elaborated parable), the parable (parable-story), the personification (bringing up inanimate things as if living) belong to the domain of tropology.

Yet they seem to be only elaborations of the metaphor, the metonymy or the synecdoche, which make up the essential core of tropology. This is the applied logic in tropology.

Re- or induction: generalization or generalization.

Two adjectives stick in these names: 'general' and 'overall'. The synecdoche covers a dual in- or reduction, opposite of deduction.

Samples.

'Epagogè', Lat.: inductio, is a line of reasoning that

a. by sampling (concept size) either in a collection (at least one copy) or in a system (at least one portion)

b. decide on a common property (concept content) (summative induction), -- property that can be confirmed in the upcoming samples (amplifying or knowledge-expanding induction or reduction).

1. Generalization

If a learning method succeeds with these (individual) students (sample), it will also succeed with the rest and thus with all lln. of the same level.

Out of 24 children, the inspector questions 4. Differential: 2 good; 1 less; 1 bad. He can generalize to the whole set (24). With the caveat that further testing may improve the preliminary assessment.

The metaphorical synecdoche that relies on resemblance puts such reasoning first.

2. Generalization ('Whole-ization')

In a medical laboratory, one analyzes urine and blood as samples that must give conclusive information about the whole sick person: from the tested part one decides on the testable whole.

A female student economics studies the economy of Antwerp. She limits herself to two samples: the Meir and the port. Although with gaps, she will still get a view of the whole economic reality of Antwerp. From tested parts (summative induction) she induces or reduces to the whole system.

The metonymic synecdoche that relies on coherence puts such reasoning first.

Note.-- The inverse synecdoche, in turn, leads to deductive reasoning: from the common (general or overall) property (conceptual content) one decides on instances or portions that exhibit that property (conceptual scope).

Immediately we see how the concept, as content and scope. is really central to reasoning (as well as judgments). Not without reason, naive or natural logic is a logic of concepts. But then one must first see the concepts at work. If not, one does not understand natural logic correctly.

7. The seventh section is a theory of definition and classification.

Both are (preferably) complete enumerations of the features of the content (definition) and the instances, resp. portions of the scope of a concept, (classification).

This is to avoid vagueness.

I. Three traditional types.

1. Categoremata (distrib.).

The essential, being-necessary and accidental (contingent) traits are mentioned concerning a class.

2.a. Categories (coll.). A system is scanned for its main aspects, namely its being (substance) and its relations (accidents).

2.b. Chreia (coll.) A system is scanned for its main aspects (the commonalities inherent in an event, respectively an act or a statement).

-- Commonplaces have mostly heuristic value.

II. Limited and integral definition. These are indirectly discussed in the three traditional definitional types.-- “Necessary/not necessary/not necessarily”, occur in modal concepts, judgments and reasoning. These three are the strictly logical modalities.

The concept of coincidence.

Coincidence is always situated within a process which, in addition to its normal (definition-faithful, necessary) aspects, ‘incurs’ non-necessary aspects through the intersection (conjunction) with essentially alien aspects, which come across as unpredictable.

One can define a process limited (by itself, separated, ‘abstract’) but also integral (global, situated in the rest) what in a limited definition of a process comes across as accidental (not - necessary), turns out to be necessary in the integral definition.-- Foreknowledge risks limited definition.

III. Classification (Classification, taxonomy).

There are categorical and transcendental dimensions.

The basic aesthetic concepts, e.g., can be defined and classified and distributive and collective (via the concept of scale).-- Example: the concept of social criticism, first classified and then defined on that basis.

IV. Textology.

A text is an (elaborated) term (concept) that expresses the conceptual content and at least one sample from the conceptual scope. In this sense, texts are definitions and classifications. At least if they are logically constructed.

Distributive and collective view, on define.

Formal logic puts concepts at the center. Just about everyone knows that. But what is very often not realized is that the concepts are either themselves distributive or collective or are thought to include a distributive or collective framework (itself a concept).

This can be inferred from the care with which formal logic treats the distributive definition (categoremata) and the collective definition (categories; chreia).

1. Define.

Take the term “girl.

The dictionary gives these definitions:

1. child of the female sex;
2. young unmarried but marriageable woman;
3. fiancée (the lover of a soldier);
4. maid (“The girl will drop that off”).

These analogical (partly identical partly non-identical) conceptual contents each refer to their own scope. But that precisely shows why formal logic attaches such importance to defining: the word ‘girl’ is so multifaceted that it is only logically manageable in well-defined form. So it is with very many words. Logic wants to know what it’s about!

2. Defining distributively and collectively.

“All/ whole” already said Platon “Totum logicum/ totum physicum” said the scholastics.

2.1. The girl per se is invariably a specimen of the collection of “all (possible) girls.” This distributive viewpoint is knowingly present when the concept of a girl comes to consciousness.

2.2. The girl in herself as a whole human being (animate body) is a collective concept. With all kinds of related aspects (female gender/child or young/unmarried or engaged or employed).

2.3. The girl in herself is situated in the whole (the collective) of all girls who make up one coherence (“the girl world”). Thus e.g. in feminist movements or in mutual envy.

2.4. The girl in herself is situated in the whole of society - as a human being - i.e. in the whole coherence called “humanity”. This is another collective aspect.

Only this enumeration gives an idea of what formal logic actually is, as concept logic. For this is how all concepts can be interpreted. So one feels the enormity of each concept when one thinks through ‘logic’ in this way!

Distributive definition: categoremes (predicabilities).

Gr.: 'katègoroumena: Lat.: praedicabilia.-- Also called "quinque voces" (five definitional terms) or "quinque universalia" (five universals).-They allow the features of a distributive definition to be enumerated in an orderly fashion.

Aristotelian.

He wanted to answer the question: "How essential are the features of the subject which are asserted in the saying, and how are they essential?" Porfurios of Turos (233/305; late antique theosopher) elaborated.-- We specify.

1. *The essence traits.*

These decay into two aspects,-- in ancient language 'genus' and 'species'. In modern language: 'universal' and 'private' collection.-- Defining binomially.

Binary definition belongs in biology: Carl von Linné (Linnaeus; 1707/1778; *Systema naturae* (1735)) defined plants and animals binomially (genus/species). That biologists still apply this proves its soundness.

General (gender) trait.

'Genos' (Gr.), Lat.: genus. Hence: 'generic'. So in order to define the term girl (in one of its Dutch meanings) we begin with the general trait: 'woman'.

Particular (species) trait.

This refers to a private class within the universal concept of woman. Thus here: 'young'.

"Diafora eidopoiios" (Gr.); Lat.: differentia specifica, specific difference. This is specific to girls insofar as they are young women.

Result.-- 'Edos' (Gr.), Lat.: species, kind. Here: species of women.

2. *Creature-need-to-know features.*

These are not 'essential' or 'vital' but flow with necessity from the being.-- Here : if fit to be married. Applies to all young women.

3. *Accidental traits.*

Applies to some young women. E.g. in full health. Or : university educated.

Logical conclusion.

'Girl' can be defined as (1) "woman who is (2) young and if fit (3) marriageable (4) kind), (5) possibly in full health or university educated.

Behold the five categoremes or definition generalities.

Collective definition: categories (predicaments).

‘Katègoria’ (Gr.), Lat.: praedicamentum, aspect rendering.-- Archutas of Taras (-445/-395; paleopythagorean), -- in his wake Aristotle define in virtue of aspects (subsystems), essential or not, a system as a coherent whole.

“How essential or necessary to a whole (system) as characteristic aspects (portions, subsystems) in a judgment and how are they?”

This is where categories are situated as means of orderly enumeration of kent stretches of a system. As collective platitudes.

1. Ten categories.

Two basic categories, viz. the being (the total identity with itself), (‘ousia’ or ‘ti estin’ (Gr.); Lat. : forma, essentia, substantia, natura) and its relations (the partial identities with something else, “pros ti”(Gr.), Lat.: relatio). Traditionally said: substance and accident.

Note-‘Sumbèkòta’ (Gr.), Lat.: accidentia, contingencies (better: relations) does not refer here to the distributive contingencies (part of the categoremes) but to collective contingencies, which with respect to the substance appear as contingent.

Four systechies.

The relations of something exhibit what follows.

1. “Poson/ poion”(Gr.), Lat.: quantum/ quale, how big/ how much (quantity/ quality).
2. “Pou/ pote” (Gr.), Lat.: ubi/ quando, where/ when (place (space)/ time(dot)).
3. “Poiein/ paschein” (Gr.), Lat.: actio/ passio (active/ passive; literally: to do/ undergo).
4. “Keisthai/ echein” (Gr.), Lat.: situs/ habitus (throwness/ design or situation/ initiative).

2. Model.

Take we a dynamic system, a murder (the creature) The doctor and / or the policeman can define: (the relations) one man / full of knife stabs (quantity / quality), near a night bar / at night (where / when), one or more attackers / a defenseless one (active / passive), overwhelmed / with signs of violent resistance (thrown / design).

These platitudes, filled in here, show clearly how the characteristics of an event, via the victim, can be enumerated in an orderly fashion for definition.

Note.-- Categoremes and categories are commons, i.e. systems of empty shells that are fillable as a configuration. However awkwardly they are heuristic (inventive). Just as if they were platonic lemmas (x’s that can be specified).

Collective definition: chreia (chrie).

Bibl. sample: H. Marrou, *Histoire de l'éducation dans l'antiquité*, (History of education in antiquity), Paris, 1948, 241.

The chreia (“usefulness”) amounted to a small page when filling in the commons (“empty shells”) in secondary education in antiquity.

Not so much the thinkers as the rhetors used these “koinoi topoi” (Gr.), Lat.: loci communes, platitudes. They help - still - to list (define) the “idia” (Gr.), the essential characteristics, of a collective concept (system) in an orderly fashion.

J. Fr. Marmontel (1723/1799) argues that the chreia is a true definition, for it attempts to express the being, the whole being and only the whole being of something. Not in the brief, binomial form (= genus/species) but in an elaborate, practically always a-potiori form (the necessary traits to make distinguishable).

Structure.

Two mnemonic versions in Latin.

1. Introduction. - middle.

Quis? (Who). Quid? (What). Cur? (By what/why?). Contra (counter model). Simile (Model). Paradigmata (Applications), Testes (Arguments of authority).-- Conclusion.

2. Introduction. -- middle.

Paraphrasis (First restatement: who/what). A Causa (Cause/ Why?). A contrario (Counter model). A simili (Model). Ab exemplo (Applications). Testes (Authority arguments, witnesses). - Conclusion.

Ambiguity.

From one material object (brute fact) the commonplaces pay attention to a multitude of formal objects (points of view) specific to that fact. With the effort to characterize as completely as possible (to list features).

This is also true, incidentally, of Aristotelian categories and categorems.

The order of the commons or aspects of being need not be unchangeable but can be adapted. The “empty shells”, comparable with the changelings in e.g. mathematics or logistics, give a view on a totality (configuration). To reject such platitudes in the name of creativity and originality is to confuse the platitudes themselves with their “monotonous interpretations”: the latter lead to the concept of “hollow rhetoric”.

There is a solid historicity present in platitudes: they set each individual who uses them on the road to original, creative interpretation.

Application.

An ancient wisdom proverb: “The roots of education are sour but the fruits of it are sweet.”-- See here.

1. What?

Note.-- Instead of a spell, the what can also be an act or event.

Note.-- The metaphor must first be reduced to non - metaphor: sour roots/ parenting = education/ parenting outcome = cause/ effect. Behold the theme.

2. Who?

Isokrates of Athens (-436/-33§), the father of the proverb, was renowned rhetor (teacher of rhetoric) and logographer (text editor).

3. Comparisons (model/counter model).

a. Model: as a plant, if maintained, thrives according to the strict rules of botany, so does the educator(s). The opposite is everyday experience (counter model).

b. Model: one can cite failed parenting phenomena here as well. E.g., of overfostered children (“the Terrible Mother”).

4. Authority arguments.

‘Testimonials’. -- “Indulgence often begins in the cradle but leads to young people eventually being unable to handle efforts later in life and becoming unruly tyrants.” *Bridge, monthly magazine of the Catholic Parents Association*, June 1998, states that “parents should be able to set rules from an early age.”

5. By what/why?

Note.-- ‘Why’ is answered with a cause (because) (e.g., even an unconscious or subconscious motive), ‘why’ with a conscious (containing free choice) motive (because).

The “what” (theme) insinuates the reason on ground (explanation). Actual life sometimes makes very heavy demands. Well, to educate is to make viable. So parenting must also harden against all sorts of disappointments (think of Freud’s ‘Lustprinzip’/‘Realitätsprinzip’). Isokrates e.g. was timid, had a weak voice.

Consequence: a political career was out of the question. He became an orator and thanks to his “acidic” efforts he became a very influential thinker and educator.

Here is a very sketchy elaboration - interpretation - of the chreia. To learn how to write texts is to show creativity, yes, but not without the ‘sour’ pattern of commonplaces that guide ingenuity in the right direction, i.e. to make good texts possible.

That,--that wisdom instilled in us by Greek antiquity. She is still “*philosophia perennis*”, eternal philosophy.

Modalities in natural logic.

G. Jacoby, *Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, (Logisticians' claims on logic and its historiography), Stuttgart, 1962, 61/64, explains how natural logic knows only the following differential necessary - non-necessary (possible) - necessarily not.

1. Modal concepts.

These are the basics.-- “A necessary evil”. “A possible good”. “An impossible (necessarily ‘non-existent’) something”.

Note that these terms consisting of several words form one term corresponding to one concept.

2.1. Modal judgments.

“A is necessarily A”. An application of the identity axiom (“All that is, is”, here: “All that A is, is A”). It concerns the total identity of A with itself.-- “A and B are not necessarily identical (e.g., with respect to number).”

It is about partial identity of A with B (analogy). “A and non-A are necessarily non-identical.” This is an application of the contradiction axiom (“Something cannot be something else at the same time and under all points of view”). Radical exclusion.

2.2. Modal reasoning.

“If all water boils at 100° C., then this water and that water (samples). Well, all water boils at 100° C. (law). So this water and that water boil at 100° C.”.

Abstracter:

“If A, then B (reason axiom), Well, A. So B”. From law (content) to sample (from rule to application). The after sentence “So B (this and that water) boils at 100° C” is necessary as a deduction. “If all water boils at 100° C., then so does this and that water.

Well, this water and that water (extent) boils at 100° C. (samples). So all water (extent) boils at 100°C.”.

Abstracter:

“If A (preface), then B (post-sentence). Well, B (afterthought). So A (preface)”. The nazin “So A (all water boils at 100° C” is, as a re.duction (in.duction), non-necessary. Because the basis, the preface replaces the after sentence: some samples do not yet prove that all samples will give the same result.

From some (from the scope) to all (content) is a preliminary, hypothetical derivation. Behold the ubiquity of the logical modalities at all levels’ of natural logic.

Coincidence.

Bibl. sample: C. Lamont, *Freedom of Choice Affirmed*, New York, 1967, 56/ 96 (*Contingency and a Pluralistic World*).

That the theory of categorems and categories (*chreia*) is fundamental, will be shown by what has been said about the accidental aspects.-- But first an introduction.

“If-then” connections.

“If the acorn falls to the ground, then normally (necessarily) a growth process follows.

“If the acorn falls to the ground and by chance a falling rock violates it, a disturbed growth process normally follows.

“If the acorn falls to the ground and by chance a hungry squirrel eats it, no growth process follows. The latter is also normal.

Normal.

Mentioned phenomena expire determined:

“If a rock splits, then normally a rock falls down”;

“If a hungry squirrel falls on an acorn, it eats it quasi-normally (= in most cases, pretty much inevitably, quasi-predictably).”

The fall of the rock is a physically necessary process, the eating of the squirrel is a biological: very likely process.

‘Normal’ is ‘creature-like’ or ‘definition-like’.

A splitting rock by definition produces a falling rock. A hungry squirrel by definition eats (or pretty much eats) an encountered acorn.

Predictability.

If-then processes (with minimum necessity) give (minimum) predictable processes. It is the modality ‘necessary’ (or ‘necessary not’) which gives absolute predictability. It is the concern about modalities that infuses the concern about defining being (nature, form of being, ‘forma’, objective concept) in a Platon or an Aristotle.

Categorems and categories (chreia).

People were paying attention.

1. Categories.

In the above example, “woman” is the being but is fit for marriage, in full health, university-formed accidentally, accidentally regarding the process of being a woman.

2. Categories.

Murder is a process “If violent attack, then death”. Although all the coincidences mentioned by Aristotle are always there, because unsituated murders do not exist, yet the inflections - near a night bar, for example - are purely coincidental and alien in themselves.

Limited and integral definition.

C. Lamont quotes J .H. Randall, Jr., *Aristotle*, Columbia Un. Pr., N.Y., 1960, citing.

Randall formulates the limited viewpoint.

“The fact that something happens by chance does not mean that there is no reason for that chance but rather that factors which are themselves determined by viz. being causes, intersect with other processes (‘conjunction’) and thus modify them or even make them impossible.”

Note.-- We saw this above with the acorn (rock, squirrel).-- “This modifying or making impossible occurs - Randall says - without being an essential (by definition belonging) part of those other processes. That is the accidental or contingent.

In other words: two or more mutually independent (by definition not belonging together) processes - whether determined or not - intersect at a given moment and a given place in such a way that - purely on the basis of one of the two thought - they are not necessary, i.e. coincidental.

Integral Thinking Lamont cites an opponent, prof G.Williams (Univ. of Toledo) who is a determinist. This one claims what follows.

Such a conjunction (concurrence) of two or more processes which are alien to nature is only accidental for those who only start from (= watch out for) one of the two or more of the intersecting processes.

If one simultaneously watches the growth process of the acorn and the process of the nearby splitting rock (or the hungry squirrel), there is no coincidence involved. But the aggregation is necessary.

But usually our consciousness is limited to one of the processes and so for us from that narrow perspective the intersection is really coincidental. The perspective determines the coincidental. Coincidence that is essentially necessary.

For example, Williams indicates the collision of the Titanic with an iceberg on 14.04.1912. This collision (“conjunction”) Was 100% determined.

By definition, the Titanic moves from Southampton to America.

By definition, the iceberg moves southward.

By definition, they intersect.

But that is only clear to those who think the two at once, -- to those who think of the Titanic as a process including the iceberg as a process.

Williams represents the integral point of view that logically comes out stronger than the limited one.

Prior knowledge/ retrospective knowledge.

Bibl. sample: C.Lamont, *Freedom of Choice Affirmed*, New York, 1967, 70ff.

Historiography explains much more in retrospect. How about that?

Resume the sinking of the Titanic.

From the separate definition (= being) of the fatal iceberg, one cannot - in advance - deduce (deduce) the contraction with the Titanic. From the separate creature definition of the Titanic one cannot deduce that contraction either.

Phenomenon/requested.

Phenomenology stands or falls with “given/requested”. If we pay attention to the relationship between the phenomenon - the dose of data with the context (the co-given) - and the requested (here: the predictability of the aggregate), then we see that for the aggregate there is too little available data (= phenomenon) for the requested. “For too little phenomenon too much demanded”.

After aggregation, the phenomenon, i.e. the immediately available data, enlarges in such a way that - with the context - much more can be derived from it. “For more phenomenon more demanded solvable”.

Afterward.

The separate definitions are supplemented with new data. One approaches the integral definition. Because this definition takes into account both the being, the separate being (laid down in the definition), and the coincidences (those of the list of categories and those of the list of categories (including chreia)). That is: it defines concrete-singular. Or ‘idiographic’, as one also says.

Magnification of the phenomenon.

Regarding the Titanic.

1. Official investigations showed that the steamer was cutting across the ocean at full speed in the middle of the night. Reason: the owners had given a sealed order to that effect to the captain to record a record speed!

2.1. It was known that icebergs calved in Baffin Bay and moved southward.

2.2. But the ship’s officers neglected the rapid drop in temperature caused by the many icebergs, established as early as the afternoon and the eve of the disaster.

Afterwards, people knew. This allows historians to explain the disaster. After the fact. Because one approached integral knowledge. This exposes the necessity or at least the quasi-necessity of the disaster. Although determined, it is not (due to too little prior knowledge) predictable.

Modalities on the court.

Bibl. sample: W. Wagenaar, *Where logic fails and stories convince*, in: *Our Alma Mater* 45 (1991): 3 (Aug.), 258/ 278.

The author mentions a case in the Netherlands. The true event ('x') (lemma) is what sleuths, judges and such try to define (thanks to sampling: survey).

1. Story.

Ms. A has been living with a boyfriend since she was 21, claims she was "assaulted by her father six years ago." Her boyfriend makes her report it. 'Assault' is the first definition.

2.1. Story.

The father recounts that he was once alone in the house with his 15-year-old daughter but administered "just a hefty rattle." "Just a hefty ramming" is the second definition of 'x':

2.2. Story.

The appointed doctor tells us that upon examination it was found that she was "no longer a virgin."--"No longer a virgin" is a third and indeed a partial definition of 'x', the true event.

a. Rhetorical.

Mid-century hermeneutics (interpretive theory) calls 'x' the material object. This is the naked, the fact as such, fact 'x'. The interpretations (interpretations) are called "formal objects," i.e., the points of view (perspectives) that illuminate the naked fact.

The same event (material object), given the interests of those involved, gives more than one formal object (interpretations). Involved parties - daughter, father - try to convince the judges using as arguments their stories.

b. Logical.

The stories are prepositional phrases (with modalities).

If story 1 is true, then the father is necessarily guilty. If story 2 is true, then the father is necessarily innocent. If, story 3 is true, then the father is not necessarily guilty, because the missus lives with a friend.

Wagenaar argues that no strict logic is involved here. This is very incorrect : the desired result of the survey and of the judges' judgment is the axiom, i.e. the premise.

From there, both the teacher and the father reason strictly logically and construct their story, i.e. the definition of 'x', the true event, deductively, i.e. from the story, their accusation as tried or their innocence.

Rhetoric does govern the axioms (pragmatically speaking) but logic very strictly governs their conclusions from those axioms.

Definition of “lesbian”.

Bibl. sample: E. Hulsens, *What is “lesbian”? (A prose of lesbian history)*, in: Streven 62 (1995): 9 (oct.), 791/803.

Two definitions.

1. M. Everardt. *Soul and senses (On love and lust between women in the second half of the XVIIIth century)*, Groningen, 1994.

The writer defines current lesbianism as:

- a. female desire,
- b. sexual acts with women included,
- c. desire that makes masculine and
- d. exclude men.

Short: a. equal, b. sexual, c. polarized gender roles, d. exclusive.

Hulsens.

In soul mates, sexual act and role division is absent. In transvestites there is role division but sexuality seems unprovable. In ‘lollepotten’ (women who ‘loll’ (= engage in sexual intercourse with each other), role division is lacking and desire for men is not excluded.

Conclusion.-- Everard’s definition hits on a limited scope, one type of lesbianism, i.e. “butch (male)/ femme”.

2. L. Faderman, *Surpassing the Love of Man (Romantic Friendship and Love between Women from the Renaissance to the Present)*, London, 1981.

Her definition reads, “All that is a predominant relationship of feeling and mind within which two (or more) women are affectionate to each other over any other is lesbian.”

Hulsens.

This concept covers a scope that includes all passionate friendship between women, -even when no sexual acts are involved.

In other words: all close girlfriends in the course of the cultural era anticipate the current lesbian in that hypothesis. The very broad interpretation of the phenomenon of “lesbianism”.

Hulsens.

The definitions vary quite a bit in degree. Identical sexual acts, situated within different (syn- or diachronic) cultural contexts, are indicated with different words, both subjectively and socially. In addition, the choices of sexual partners also differ.

More than that, even the homosexual impulse itself differs. Hulsens therefore criticizes Everard’s definition that does not take these three observations into account. Defining physical phenomena physics can handle well. Defining biological and especially human phenomena is something else.

'Postmodern' (a potiori).

Bibl. sample: J. Gerits, *Recent trends in Dutch literature*, in: *Streven* 1994: May, 416/ 417.

To define a literary movement is doable but "a-potiori" i.e. by listing enough characteristics so that the whole can be distinguished from the rest. Completeness of enumeration for the purpose of definition is impracticable.

Editorial Criticism. (conceptual content)

Reason as conceived by the moderns,--as the ability to keep everything ready apart with or without evidence has been written off. In its place comes the impression that subject and object, the data intertwine. Which leads to "blurring" as the main impression.

1. *Fact and fiction (comprehension) intertwine.*

The "new historical novel" as well as the documentary novel show it.

Thus: E. Marain, *Rosalie Nobody* (1988). Only a text that thinks fact and fiction together actually counts.

2. *Metafiction.*

E.g., P. Hoste, *Movements of a Commuter* (1993), which includes a title story and a story, "A Writer Who Is Not a Writer Himself."

Meaning: "I write texts but not stories". Meant to reflect on fiction, language on language that tells fiction.

3. *Intertextuality.*

A first text is incorporated piece by piece into a second text. Thus: P.Claes, *The Satyr* (1993). Fragments of *Apuleius (The Golden Donkey)*, *Petronius (Satyricon)*, *Homer (Odyssey)* (= ancient texts) are interwoven into a story set in antiquity. Literary genres intertwine. Postmodernism.

4. *The modern self.*

Thus: I. Michiels, *Journal brut* titled: "*Ikjes sprokkelen*", (gathering lots of 'I')

Thus: Bernlef, *Brain Chimneys* (1984), which depicts a Dutchman near Boston who loses his mind (described from the inside); *Bernlef, Eclipse* (1993), which depicts a man, probably stricken with a stroke, who, having ended up in a canal with his car, still manages to pull himself out. Having regained consciousness, he suffers from amnesia, is speech impaired, and has an insensitive left half of his body: he perceives the world in a hazy, half-perceived manner.

The orderly, self-controlling, all-embracing self of modern rationalism becomes its opposite in postmodernity. It is as if texts, i.e. signs without much reference to things outside the texts, are the only thing that offers 'something to hold on to'.

Comprehensions.

The scope (domain) to which the conceptual content refers takes the following forms.

1. Categorical captures.

These are not comprehensive.

1.1. Singular. private. universal encompassing.-- Just one being, several (some) being, all being. One instance, a subset, the universal set.

Distributive.-- The city of Antwerp, the cities of Belgium, all (possible) cities.

1.2. Singular. Partial, total (overall) encompassing.-- Just one part, several (some) portions, the whole (all portions).--

Collectively.-- One city section, several neighborhoods, the entire city.

Note.-- The singular concept.

The Romantics emphasized the singular nature of reality.-- A traditional language easily confuses “understanding” with “general understanding. If concepts have a singular, unique, singulated, singular content, and thus as magnitude precisely one individual being, they are singular.

This is particularly evident in sciences such as geography and history. There is just one Antwerp, just one Belgium,--just one universe. There is just one Emperor Nero, just one First World War (1914/1918).

Also in medicine: the clinician has to deal with -- not the disease but with -- sick people, -- individuals. Biology knows DNA (deoxyribonucleic acid) is individual.

The Badener Schule (W. Windelband (1848/1915) et al.) distinguished between idiographic (the uniquely descriptive) and nomothetic (the generally treating) sciences.-
- But beyond the sciences think of the monograph that represents the just once existing.

2. Transcendental (all-encompassing) scope.

Thus, there is only one. Being,-- truth concerning being, unity concerning being, value of being are the four transcendentalities.

The ontology, basis of metaphysics, has them as its object.

Subject matter sciences, however, limit themselves to categorical encomiums: subareas of the total or transcendental reality.

It can be seen that regarding science theory, the types of concepts have a serious importance to be taken.

Classification (classification, taxonomy),

What the definition is for the conceptual content (complete enumeration, summing, of all notae), that is the real classification for the conceptual scope (complete enumeration, summing of groups of specimens/ portions), Which means that the summative induction precedes it every time,

A model.

The basic aesthetic concepts,-- See here.

1. Conceptual content

One can only order encompassing if one knows the content. What does 'aesthetic' mean? Since a number of ancient Greeks, one defines 'aesthetic' (beautiful) as "everything that, because of its appearance, arouses admiration and astonishment." That is the objective definition,--

But 'aesthetic' also refers to everything that, even in the face of the unsuccessful (caricatural) in virtue of 'aestheticization' (apology), nevertheless arouses amazement. That is the subjective definition,

2. Concept scope

One can order all that is aesthetic in two ways. According to the distributive or the collective point of view.

2.1. Distributive.

One pays attention to the resemblance. -- Thus one can enumerate by one: clean, beautiful,-- sweet, graceful,-- exalted, grandiose, comic, tragic, even tragicomic, Each of the enumerated categories (fundamental concepts) provokes an aesthetic experience of its own nature.

2.2. Collective.

In order to discover not only the 'flat' collection (class) but also and at the same time the system of basic concepts of all that is beautiful, we must have a coherence. In other words: there is a differential which extends from small-scale over medium-scale to large-scale.

Small scale.

The little flower of the herb-roar-me-not. All that because it is minuscule, attracts, delights, is of that small scale. So too, in her way, feminine lingerie.

Large-scale,

Anyone visiting the Alps, especially the first time, comes away impressed: "How grandiose!"

Note.-- The failed becomes, subjectively, astonishing, aesthetic, in the comic (the clown e.g.) and in the tragic (in the antique Greek tragedy) or in the sinking of the Titanic). This is: small-scale (to laugh at) because "not very", large-scale (to weep at) because "very".

The scale of sensing differentiates the categories.

Classification (an example).

Prof M. Bronfenbrenner wrote (*Harvard Business Review* 1973: Sept./ Oct.) about social criticism. He began with a classification.

1.1. *Radical Anarchism.*

Thus Abbie Hoffman's manifesto (1968).

a. Abolish money (not paying house rent; not spending on food, clothing, medical care, communication media, W. C.).

b. "Our goal: complete non-employment. A society in which everything is done by machines and people are completely freed from labor drudgery". The Yippies (Zippies) put forward such axioms.

1.2. *More moderate anarchism.*

I.e. the counterculture of the Hippies.

a. Withdrawing from "the establishment" (established society) into autarkic communes (self-sufficient small living communities) in the metropolis or in the countryside. Economic existence through selling cheap jewelry or agricultural cooperatives.

b. "Pushing the boundaries" (= experimenting with sex and drugs (the latter in the wake of the Beatniks (1950+)), with religions (eastern e.g.) and occultisms.

1.3. *Syndicalism (syndical anarchism).*

a. The state: to be phased out (all anarchisms advocate this). "All power to the workers" (amada). Capture power through strikes (not political revolutions).

b. Factories get worker governance.

2. *Humanist socialism.*

Figurehead: the young Marx (before 1848).

a. Liberation from "Entfremdung" (practically: the industrialized society that enslaves people).

b. Substitute material motivations for moral ones.

c. Income and property equality.

d. Complete gratuitousness of some goods and services.

3. *Neostalinist socialism.*

Figureheads Lenin and Marx.-- In Japan. Maoism holds analogous axioms.

a. Freedom is such a valuable commodity that it must be rationed : deviations regarding opinion and behavior are intolerable (authoritarian system).

b. The substructure of culture (the economy) must be planned (no free market economy).

One sees the differential: from radical anarchism to communist authoritarianism. The New Left was very divided in terms of the ideal that was to replace the established society.

Definition of the term “social criticism”.

Bronfenbrenner then pauses to consider what is common in all those currents. In other words: given the scope of understanding which is the content of understanding present in all those currents? Thus he arrives at an inductive definition.

Cultural Criticism.

The focal point of social criticism is the established culture. Bronfenbrenner lists two-three aspects.

1. Knowledge-theoretical.

Except for the neo-stalinists, most of their adherents are “irrational”: they break with rationality as practiced by the modern, capitalist West since early modern times.

In this sense, social criticism represents one of crisis of established rationalism (“Enlightenment”) and is postmodern.

2. Social theory.

Here Bronfenbrenner says what follows.

2.1. Rejected Society.

The established culture creates a society that ends in something negative: hopeless disorder, another world war, the downfall of humanity (what is called “doom and gloom”). Military dictatorship also seems to be one of the outcomes.

Especially the parliamentary democracies -- with party system and free elections -- are proving powerless.-- Therefore: radical and especially urgent (still to be realized in this generation) reform is necessary: a revolution -- short and non-violent -- is the salvation.

2.2. Replacement Company.

When it comes to designing a different society that escapes criticism, we see great division.

One rereads the classification into types: from radical anarchism to neo-stalinist authoritarianism.

Note.-- That social criticism, once it has to move beyond the rejection of what exists, is sharply divided, is shown in J. M. Chauvier, *Gauchisme et Nouvelle Gauche en Belgique*. (Leftism and New Left in Belgium.), “New Left” or “gauchisme” -- names for social criticism -- preaches

a. instead of the working man the playful (interpreting life as a pleasant game) man,
b. short-term self-government (which is anarchism). With as variants just anarchism,- trotskyism, Maoism. Disagreement also among us.

Note -- In 1989 following Gorbachev’s visit, “the spring of Beijing” breaks loose: students and population demand liberalization. Even then, social criticism showed a strong division.

Textuology (text as illustrated definition).

“Textus” (Lat.), tissue. ‘Textuology’, theory concerning all that is text.

Bibl. sample : H. Marrou, *Histoire de l'éducation dans l'antiquité*, (History of education in antiquity,, Paris, 1948, 239.-- Students listened to a story and then made a report (rapport) of it.

Given: story read aloud.

Asked: paraphrasis (Gr.), rewriting with one's own words yet true to reality.

1. Text.

Found on a papyrus.-- A boy who had murdered his father and “feared the legislation on parricide, fled into the desert. As he passed through the mountains, he was chased by a lion. With him at his heels, he climbed a tree. Then he saw a snake run up to his tree and perhaps climb it too. (...). While fleeing from that snake, he took a fall.-- The evil one does not escape the deity: “The deity will subject the evil one to judgment.”

Note.-- The words shown in quotation marks are words quoted from memory.

2. Logical.

The text is a term, i.e. an articulated concept.

a. Content.

Definition.-- Traditionally, the content is called “moral lesson. Here: “The deity will subject the evil one to judgment”. Where ‘judgment’ means “on a (bad) deviation some deity reacts back with an intervention” (steering-craft concept from religion).

b. Size.

Illustration.-- Also “exemplification”. -- Out of the whole scope (out of all the cases of God's judgment) the story extracts precisely one sample (the scenario with the boy). Which is inductive method.

Content/Size.

With Kant: without the sample (the retrieval), the conceptual content of “divine judgment” is empty; without the moral lesson (content, definition), the sample (illustration) is blind.

With Goethe: “Grau ist jede Theorie. Grün des Lebens goldner Baum” (Gray is every theory (definition). Green 's life (illustration) golden tree). Thus antique teachers suddenly taught students definitions and illustrations (samples) of definitions. The abstract became living-concrete by telling “a case.”

Substance for today's adherents of “philosophy for children”. And the regulative AND the applicative model at the same time! And the rule AND (just one) application!

Textuology : thematics.

Bibl. sample: O. Willmann, *Abriss der Philosophie*, (Outline of philosophy), Wien, 1959-5, 10/12.-. Scholastics (800/1450) distinguished more than one type of theme.

1. Word.-- “Unum vocabulum”.

Given.-- “The Girl”. ‘Labor’

Asked. -- Such a subject allows no limitation. Consequence: the totality (“All that is girl,” “All that is labor”) would be to treat, i.e., the whole girl, the whole labor,--all girls, all forms of labor, the totality of all girls and of all labor,--situated in our whole world. That would be bankable, encyclopedic.

Conclusion.—Instead of integral is the requested, text or essay, a-potiori, (definition and samples from the scope (for illustration)).

2. Words.

Given.-- “The girl and the boy”, “Labor and economy”. In other words : relations.

Asked.-- Limitation prevails here: only the relation or relations between the two themes are the requested (text).

3. Proposition. “Propositio .aliqua”

Given.-- “Young girls always have problems”, “Labor is a pleasure but also a burden”.

Asked. -- The limitation lies in the phrase (definition + samples).

4. Text.

Given.-- A text is a term (set of judgments) that precisely addresses a theme.

Asked.-- To access some higher institutions in France, summary of the text is essential (thesis (definition) and samples (scope)).

a. “Contraction de texte”, text contraction of one text (from e.g. 4000 words to +/- 400).

b. “Syntèse”, synthesis of more than one text (to be reduced to 1/10 of the combined words). But such that a kind of assessment already shines through.

After this first task (GV) comes the actual GV, which is to take a position on the content and scope of the concept (theme) being discussed.

Note.-- To draft texts is to elaborate concepts (see above four types) very much in terms of content and minimally in terms of scope (samples, illustrations) in one’s own text.

In other words: it is applied conceptual logic. Of course, one pays attention to the given and the asked (= phenomenological distinction) to avoid “ignoratio elenchi”, “walking well but off-piste” (S. Augustine). Phenomenology is the foundation. On that pedestal one works out logically.

8. The eighth section is a definition typology.

In a sense, man's rational activity is either having definitions or finding definitions. Hence the great expansion of this section.

1. Algorithmic definition.

A process (dynamic system) consists of a substructure and a superstructure. The latter is a logical sequence of goal-directed actions (paleology) or algorithm.-- Main-- and written-- arithmetic, kitchen instructions e.g. are examples.

2.1. Axiomatic definition.

'W', axiomatic-deductive science (Aristotelian) is the stake. The conceptual content (if) contains axioms (basic concepts and basic judgments). The scope (then) contains the deducible (deductible) propositions from them. Main requirement: consistency.

Because the stake is a system in the strict sense.

Thus: Peano's six axioms defining the positive integer.

2.2. Boundaries.

Axioms contain e.g. descriptive definitions (Peano: number, zero, successor; Hilbert: point, line, plane) and implicit definitions (which are realized by mutual definitions). These count on the remainder (res duum) of the natural logic preceding formalization and axiomatization.

Formalization.-- That is the strong degree of axiomatics. Consistency, completeness, decidability, strengthening/weakening are features.

3.1. Lemmatic-analytic definition.

Typically platonic.

a. One pretends that the requested (x) was already known (lemma) and

b. one places it in an appropriate structure (analysis). Thus: 15% and rule of three.

3.2. Pragmatic definition.

Typical peircian.-- The concept content is an x (lemma) as long as it has not been tested for its effects in a context situated. The concept of Marxism is exposed in the 85,000,000 deaths it caused.

3.3. Reducing to the implausible.

"If ye assert it, then it follows from it what ye refute." Thus in limp definitions, in proofs from the absurd.

4. Converging definition.

The structure of treasure hunting (groping series of actions lead to the definition of the lemma).

5. Dialogic definition.

The theme, the x, is gropingly defined by allowing all opinions on the subject to have their say in a dialogue.

Algorithmic definition.

'Kinèsis' (Gr.), Lat.: motus, movement, process, consists of a sequence of interrelated phases (o.g. of a goal).

'Praxis' (Gr.), Lat.: Actio, action (deed) is one type of process. Praxeology (praxiology) is theory of action.

It will be seen that the binomial definition (gender (universal class)/ species (private class) is not sufficient here as a definition.

1. Scope.

Ch. Lahr, Logique, Paris, 1933-27, 497, gives as an example the industrial definition, : paper e.g. was made in its time according to an integral (not neglecting details) production process.

Yet e.g. teaching is also a sequence of purposeful actions.

Behold two samples from the scope.

2. Content.

Two aspects together make up the one conceptual content.

2.1. Substructure (*infrastructure*).

Acts as the processing of goods, as the transmission of a message (teaching) are situated in matter: making paper presupposes materials and implements (used to be: wood, chlorine,-- stamper etc.); teaching presupposes except pupils with e.g. notebooks and thus the teachers with an integral lesson preparation (preparatory notes).

2.2. Superstructure

What is actually required is an algorithm, i.e., a logically programmed sequence of coherent, because purposeful, partial actions.

The definition is actually called "algorithmic definition".

Dynamic system.

This is a system or whole (generalization) consisting of

- a. a beginning act,
- b. a series of intermediate acts,
- c. a final act.

To represent them in detail, integrally, (in virtue of summative induction) is to represent the process (action), whole of the process and only whole of the process (i.e. the being, as conceptual content).

Note.-- Around 825, in Baghdad, the Islamic mathematician Al Chwarismi transcribed a work on arithmetic rules in India. Translated into Latin in the XIIth century, "*Algorismi de numero Indorum*". Translated "From the hand of Al Chwarismi on number among the Indians".

The term "algorithm" or "algorithm" dates back to that mid-century work. The term 'algorithm' - said in passing - is a key concept in computer science.

Algorithmic definitions.

First and foremost, summative induction is the only basis.

1. *Main and written arithmetic.*

27 x 35.-- Infrastructure in mental arithmetic is of course minimal. Beginning act: e.g. $20 \times 35 = 700$. Intermediate act: $7 \times 35 = 245$. End act: $700 + 245 = 945$.

Written arithmetic demands paper and pen e.g. as infrastructure. The series of operations situates the numbers in the places of a configuration (boxes for units, tens, etc.) which has as its structure e.g. multiplication.

2. *Kitchen requirement.*

Bibl. ample: Da Mathilde, *325 recettes de cuisine créole*, (325 recipes of Creole cuisine), Paris, 1975, 215s.. -- Riz doux au lait de coco. (Sweet rice with coconut milk), -- See here.

a. *Infrastructure.*

Cookware. Fire.-- Ingredients: a well grated coconut, a handful of washed rice per person, a tablespoon of powdered sugar per person, a piece of cinnamon, a little nutmeg, juice of a green lemon.

b. *Suprastructure (algorithm).*

1. Debarking the coconut. Puncture them with a nail that one beats into the head holes. Collect the fruit juice in a bowl.

2. Break the nut with an axe. Fluffing the debris so that the brown epidermis is removed. Grating. Result: a mush.

3. Pour these into a bowl. Pour in the bowl of fruit juice. Add a glass of water to it.

4. Pour this rather liquid mash into a large enough piece of gauze or tulle and wring it out over a container.

Result: a rather dry mash.-- meanwhile: gently cook the rice on the stove until cooked through.

5. Mix rice and coconut milk. Add sugar. Also nutmeg and cinnamon.

6. Let it fester.

7. Enjoyment.

According to Da Mathilde, this is a dessert.

Note -- “Da” means “Auntie.”

A cuisine definition is not just the vague name “Soft Boiled Rice with Coconut Milk” (the title). It is the whole text that makes up the term, i.e., the definition of the prescription. One simply cannot put an algorithmic system into a e.g. purely binomial form.

In other words, one does not confuse “definition” with “binomial definition” as is often done. At the same time: for the umpteenth time, it appears that the concept of ‘term’ does not coincide with just one word, as e.g. logisticians or cognitivists imagine, but also with an entire text.

Axiomatic definition.

Bibl. ample: E. Beth, *The Philosophy of Mathematics*, Antw./Nijmeg., 1944, 63vv..

-- We rewrite Beth's text yet reflecting him correctly. To make that text clear conceptually.

Axiomatic-deductive science.

Symbol: 'W', The definition.

1. *Conceptual content.*

Terms and propositions make up the content.

1.1. *Terms.*

W consists of a finite number (all at once) of base terms such that

a. its meaning "needs no further explanation" ("explanation").

b. the meaning of all other terms (complement) occurring in W can be defined only with the help of these basic terms.

1.2. *Theses.*

W consists of a finite number (all at once) of axioms (if) such that

a. its "truth" is "evident";

b. all other (than) propositions (derived judgments) within W can be logically derived (deductively) from the basic propositions (= axioms).

2. *Conceptual scope.*

If propositions belong to W ("apply in it"), then any ("any") logically sound proposition that is deducible from these propositions also belongs to W.

Note.-- This is a summative deduction, for it applies to the totality which applies to each individual derived proposition as to its magnitude.

Note.-- The correct, i.e. pure aristotelian, understanding.

Some - including Beth - criticize "the evidentiary postulate" of Aristotle. Indeed he speaks of "needing no other explanation" or of "evident truth". Aristotle was critical enough of opinions of his time not to mean "given" or "assumed as given".

In other words: it is a phenomenological evidentiality that he means. Incidentally, 'alètheia', truth, in ancient Greek, meant "what shows itself".

The domain of Aristotle's axioms is "all that (so) is", i.e. all that is something, not - nothing. The geometries of Eukleides or of Riemann or Lobachevsky are axiom-tic-deductive systems in purely mathematical terms (symbols + operations, mental realities) These are non-nothing, something, realities. THAT is the correct, i.e., aristotelian or purely ontological interpretation of Aristotle's claim that his axiomatics refers to "realities".

Axiomatic-deductive reasoning.

I. Bochenski, *Philosophical methods in modern science*, Utr./ Antw., 1961, 98vv. (*The axiomatic system*). Abridged, this boils down to this.

Since Aristotle's axiomatics, the sentences within a logically rigidly closed system are either axioms (not derived from prior judgments) or propositions (derived from axioms and already proven propositions).

Traditional model: the Euclidean Elements of geometry.

Logistics (since Frege's *Begriffsschrift* (1879)) introduces:

- a. formalism (logistic syntax of symbols with neglect of semantic and pragmatic objectives (except the logistic itself, of course));
- b. axioms and rules (formulation processes) distinct from them (but not independent of them);
- c. care taken with well-formed expressions (terminology).

A model.

Bibl. ample: J. Anderson/ H. Johnson, *Natural Deduction (The Logical Basis of Axiom Systems)*, Belmont (Calif.), 1962, 6.

Through this simple model, we draw out the logical structure.

1. Axiomatic ("if").

Note: '>' means "greater than".

Ax. 1.-- If a and b are unequal, then either $a > b$ or $b > a$.

Ax. 2.-- If $a > b$, then a and b are unequal.

Ax. 3.-- If $a > b$ and $b > c$, then $a > c$.

2. Deduction ('then').

Derivable propositions.

Thus: "a > a is unthinkable" (*note:* within the given system). Proof.-- In Ax. 2 we replace b with a.

Consequence: "If $a > a$, then a and a are unequal". Which is absurd (incongruous).

Note.-- What theorists do not specify is the axiom " $a = a$ ". An absolute law in a mathematical text. By substituting b for a in Ax. 2 replacing b with a exposes that unstated axiom.

Proof from the Incongruous.

The general law of reasoning reads, "If you assert that, then it follows - logically - what you refute."

That law of thought gets one application in the above evidence.

System.

Axioms define a system. At will - especially since logistics - axioms can be introduced. Yet from the Aristotelian definition of 'axiomatics', one law remains straight: don't contradict yourself within the system!

Axiomatic definition: integer positive number.

Bibl. ample: C.L. Lewis, *La logique et la méthode mathématique*, (Logic and mathematical method.), in: *Rev. de Métaph. et de Morale* 29 (1922): 4 (oct./déc.), 458ss. (L'école italienne)

G. Peano (1858/1932; *Formulaire de mathématique* (Mathematics form), (1895/1908)) defines the conceptual content “integer positive number” axiomatically.

Logical terms:

class (= term), s (term for class), member of class (copy), if, then (implication).
Mathematical terms: number, digit numbers (0, 0+ (successor to 0); a, b, c (letter numbers).

Definition.

This is the complete (integral, summative) enumeration of all the knowledge traits and only of all the knowledge traits that compose the content of the concept of an integer positive number.

1. Number is a class.
2. Zero is a number.-- If a is a number, then $a+0 = a$.
3. Zero is the successor of no number.-- If a is a number, then $a+$ (= the successor of a) is not 0.-- In other words : 0 is the first number.
4. The successor of a number is a number.-- If a is a number, then $a+$ (= $a + 1$) is also a number.
5. Equal successors follow equal numbers.-- If a and b are numbers and $a+ = b+$, then $a = b$.
6. If s is a class of which 0 is a member and every member of s has a successor within that class s, then every number is a member of s.

Note.-- Axiom 6 amounts to a “mathematical induction.” Better put, on a summative deduction that a-priori situates every single number within the totality of all “whole positive numbers.”

Axiomatics.

She is a complete enumeration (o.k. summative induction that precedes it). If not how could Peano define so precisely? Axioms do not fall out of absolute nothingness!

Not only are the axioms a complete enumeration. They are one coherence (system), which does not tolerate contradictions (also called ‘paradoxes’). This system governs all deductive derivations (‘propositions’) as postulates from the axioms as propositions.

Content/Size.

Change the content by, e.g., omitting ax. 3 and by introducing “-1+” (= the successor of -1), and ye change the size (introducing negative numbers).

Conclusion.-- The six axioms are one term (text) with axiomatic scope.

Descriptive and implicit definitions.

Bibl. ample: A. Menne/ G. Frey, *Hrsg., Logik und Sprache*, (Logic and language,), Bern/Munich, 1974, 133f. (*Das Peanosche Aximensystem*).

Peano's axioms.

We repeat them briefly, as the authors give them.

1. Zero is a number.
2. The successor to any number is a number.
3. Two numbers with the same successor do not exist.
4. Zero is the successor of no number.
5. Any characteristic of zero that the successor of any number with this characteristic also possesses is peculiar to each number.

1. *Descriptive definition.*

To begin with, the five listed axioms contain logical symbols. But they also exhibit three descriptive symbols, namely, “number,” “zero,” and “successor. Where “successor of a number is this same number + 1.

Note.-- Descriptive expressions (‘functions’) involve changeables which, when filled in by constants (immutables), become descriptions of ‘things’ (*note:* not purely logical or logistic realities).

Thus: “ $2x + 1$ ”. If x is filled in by e.g. 2, an unchanging number, then that expression becomes “ $2 \cdot 2 + 1 = 5$ ”, the description of a (constant) number.

Note.-- D. Hilbert (1862/1943) defined Euclidean geometry in terms of twenty-seven axioms. These contained three descriptive symbols: ‘point’, ‘line’ and ‘plane’.

2. *Implicit (mutual) definition.*

‘Implicit’ (non-explicit) is contrasted with ‘explicit’ (explicit).

The symbols ‘number’, ‘zero’ and ‘successor’ are introduced as basic terms in the axioms

- a. without being proven and
- b. without being explicitly defined.

a. On its proper understanding, one counts on what the number mathematician already knows in virtue of natural, pre-formalistic arithmetic which thus lives on as a natural remainder or residuum within formalization.

b. The basic terms define each other mutually - ‘mutually’ -. That is precisely the power of the system or logically coherent set of axioms. They are all thought of simultaneously as one complex. Whether there are contradictions or undecidables will be seen later.

Formalization.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 564ss. (*Mathématiques modernes et géométrie non-euclidienne*), (Modern mathematics and non-Euclidean geometry).

The mere syntax opens the way to broadenings of the natural mind.

1. Numerical mathematics.

Natural arithmetic, for example, relies on numerical phenomena (data) expressed in a process accessible to the common mind.

1.1. “This whole (all thirds) cake I divide into three portions such that ye each get precisely one third (fractional number).”

1.2. Formalized : “A collection of two numbers a and b , if placed within the configuration a/b forms a fractional number”. In other words: the terms “whole pie” and “partial pie” (here: third parties) are robbed of their natural - experiential forma (knowledge and thought content), turned into pure names and empty shells (e.g. “empty sets”), fillable with a multitude of data (here: letter or number numbers),-- this within a configuration of places with accompanying axioms, laws and rules.

Thus: “If two fractions a/b and c/d may be rewritten to $ad = bc$, then they are numerically equal.”

2. Space mathematical.

2.1. Natural geometry works with data (points, lines, planes, bodies) comprehensible to our natural understanding of space.

Thus: the postulate of Eukleides “Through a point outside a line runs precisely one line”. We understand this from our natural spatial understanding.

2.2. Formalized.- G. Riemann (1826/1866) axiomatically finds a concept of space such that “through a point outside a line there is no parallel line at all.” N. Lobachevsky (1793/1856) axiomatizes space such that “through a point outside a line an infinite number of parallel lines run”.

Both scholars are at the cradle of non-euclidean geometries. For the concepts (point, line, etc.) are deprived of their naturally given contents , made into pure names and empty shells (“Everything is manufacturable”) which, together with some configuration provided with axioms, laws and rules, are fillable by a multitude of non-natural ‘contents’ (thought products).

That’s formalizing.

Note.-- One, just one at some ‘natural’ predisposition, viz. emptying data into shells that can be filled at will, is the root.

The axiomatic-deductive system.

Bibl. sample:

-- A. Virieux-Reymond, *L'épistémologie*, Paris, 1966, 48/52 (*La méthode axiomatique*);

-- A. Menne / G. Frey, *Hrsg., Logik und Sprache*, Bern/ Munich, 1974, 12Bff..

Menne/ Frey argue that an axiomatic deductive system (calculus, i.e., arithmetic) exhibits the following aspects:

- a.1.** basic symbols (basic terms),
- a.2.** basic statements (axioms), which make up the pedestal;
- b 1.** well-formed expressions and
- b.2.** derivation rules.

Keep this foursome firmly in mind.

Axioms.

Virieux-Reymond summarizes what Rob. Blanché, *Axiomatique*, Paris, 1955, on the subject.

The distinction, common since Eukleides, between (very general) axioms, (less general) postulates and (ordinary) hypotheses is abandoned. For axiomatics starts from propositions (axioms) that are unproven and even unprovable at the time, but whose logical, resp. logistic validity must be demonstrated later.

All axioms are at once “posited” (presupposed).

- 1.** They must be mutually independent (distinguished).
- 2.** But not separated : they are defined including all others.- Their number they are finite, as small as possible (parsimony axiom).

Existence.

1. The axioms (if)themselves exist thanks to the will of the axiomaticus/ axiomatics. Yet not without a remainder (residuum) of natural intuitions.

2. The derivations (then) exist o.g. deduction rules expressed in well-formed symbols (terms).

Conditions. These are as follows.

1. *Contradiction freedom* (consistency).-- Mutually partially contradictory systems exist. But a single system in itself must have no inner contradictions. This is the requirement of logical consistency.

2.1. *Completeness.* -- If of two contradictory propositions within the system by the means of the system only one is provable then the system is complete.

2.2. *Decidability.*-- If the (un)truth of one of two contradictory statements can be decided by the means of the system, then it is decidable.

Less emphasis is placed on the last two conditions, however.

Content/Size.

'System Changes'.

Replace in Peano's system "Zero is the successor of no number" with "Zero is the successor of -1", and one introduces beside the positive the negative numbers.

1. Attenuation.

Instead of replacing an axiom with another one, one can omit axioms. Then the system weakens (= size increases). If we keep all the Euclidean axioms but drop the axiom about the only line through a point, we get the geometry of Lobachevsky.

If one preserves all the axioms except the one concerning the parallel through a point but in such a way that the number of possible parallel rights remains undetermined, then a gap arises and one obtains a more comprehensive system (magnitude enlarged) of which the Euclidean and the Lobachevskian geometries are only partial systems.

2. Amplification (saturation).

The converse.-- One strengthens the system (content) by adding one or more axioms (but always independent of the already presupposed ones, of course).

If that addition introduces contradiction, then the system is saturated. Which generally happens rather quickly.

Calculus.

Once the axioms (with basic terms or basic symbols inside) are in place, then the derivation, the actual calculus or arithmetic, of well-formed theorems can begin.

1. Such a thing is possible only insofar as far-reaching formalization is already present. So in mathematics, logistics, - theoretical physics.

2. Such a thing is not possible without a remainder - residuum - of naturally - given intuition (contemplation). even though a calculus is essentially intended to be - not a naturally - logical reasoning but - an admittedly provided with rules but blind manipulation of symbols, i.e. an arithmetic (calculus).-

Note.-- The intuitive-natural remainder shows itself again but differently in the metatheory (meta-language) about an axiomatics.

Conclusion.-- Pure syntax without minimal rest of natural (semantic - pragmatic) thinking is thus impossible. Combining always puts minimal intuition first.

More so: the ratio "content/ size" so typical of the natural, logic still governs all that is formalized. That too is a residuum or remainder!

Limits of formalisms.

A. Tarski, *Introduction à la logique*, Paris, 1971-3, 100, confesses that notwithstanding that for him logics is “the basis of all other sciences,” a complete knowledge of it in order to think correctly is not an absolute condition.

More to the point, “Even professional mathematicians do not know logics, such that they are aware of all its laws while using it.”

Natural thinking.

O.c., 70, he argues that the whole “old” logic can almost be reduced to the logistic theory concerning the basic relations between classes, i.e. a minute part of the whole class theory.

Note -- He confuses logics with natural logic.

A. Menne/ G. Frey, *Hrsg., Logik und Sprache*, Bern/ Munich, 1974, 128/ 142 (Das Residuum der natürlichen Sprache), searches for pages on how basic natural-logical insights continue to persist in the immense edifice of formalism. The authors address the concepts, modes of speech, and forms of definition that “must be meaningfully (understand: semantically-pragmatically) understood” in order to build and understand a formalism.

These remnants of natural thinking speech to be put forward they are called “das Residuum der natürlichen Sprache”, testified remnant of natural speech. Which is something else than ascertaining in what language (meta-language) one can speak about a calculus.

A few examples.

1. In propositional logics (judgment formalism), “expression” and “variable” (variable) occur as terms. Well, these cannot be defined within the logistic itself. However, they are further defined solely by “aufweisend-zuordnende Definition” (in virtue of inshow attributing definition). E.g. “That’s a table”. That is everyday form of definition. Ostensively. One shows a specimen.

2. ‘Part’ or ‘form’ are natural concepts. But these cannot be made clear by showing a specimen (toning definition). They are simply brought in as undefined, immediately meaningful and intelligible concepts from natural-logical speech.

For example, proposers provide a whole range of basic concepts.

Note.-- Especially the distinction “given/requested,” core of phenomenology, and the pairing “content/scope” dominate formalisms.

Lematic-analytic definition via situationalization.

O. Willmann, *Geschichte des Idealismus*, III (*Der Idealismus der Neuzeit*), Braunschweig, 1907-2, 38:

“One of the most fruitful methods of modern mathematics, the analytic principle, is of antique and Platonic origin. It is reported of Platon that he was the first to offer the study by means of ‘analysis’, reduction, to the Thasian Leodamas”.

Thus Diogenes Laërtios 3:4.

The reduction has as its scheme:

“If preface, then nazin. Well, nazin. So voorzin”.

1. Lemma.

‘Lèmma’ (also ‘prolèpsis’), Lat.: anticipatio, anticipation, meant “given further to be worked out”. So even in rhetoric.

The wording: “Supposing that the requested (sought) was already known, what can be exposed including new data?

I.e.: through the detour of being situated in some appropriate structure.

Example.

Given. -- 75.

Asked.-- 15% of 75.

We do not know the result of the calculation but we can call it x with Fr. Viète (letter calculation), the provisional replacement name for the lemma.

2. Analysis.

Only by introducing the as if known X can the analysis start.

We can situate x within the structure (differential) of the rule of three, an appropriate structure.-- That gives viz: 100% is 75. Well, 1% is 75/100. So 15% is 15.75/100.

Platonically, such processing is called “analysis” or reductive reasoning.

Detour reasoning.

The analysis with and around the lemma or x reveals via its situating in an already known context -- here: the rule of three -- the true facts -- the essence or forma -- of x.-
- Separated (limited) from that context or structure, x is an unknown and remains unknown. Situated within that context (integral) -- a set of relations -- x reveals its truth.

One sees it: instead of ‘analysis’ for short the full name for this method would be “lemmatic-analytic method”. But since Fr. Viète and his literalism, especially mathematicians (algebra, analytic geometry, etc.) shorten it to “analysis.

The results of experimentation within a structure that fits it only reveal the conceptual content that is X in truth.

Pragmatic definition (effective knowledge).

“Naturam morborum ostendunt curationes”: the nature of diseases show the methods of healing.

Ch. Peirce in his: *How to Make Our Ideas Clear*, in: *Popular Science Monthly* 12 (1878): 286/302, his “pragmatic maxim” articulates his pragmatic (result-oriented) rule of conduct :

1. Note a conceptual content;
2. pay attention to the practical effects which the contents of the concept, once tested, applied in life situations (laboratory, education for example), show. Well, all that we know about the content of the concept shows itself in, yes, reduces itself to these effects.

J. Dewey says: for Peirce it is not the origin of the content of the concept that is important, but rather “the world in the making” (integral definition, situation in context) by applying that content, by experimenting with it.

Peirce: “In fact, that maxim is merely an application of the one principle of logic that Jesus recommended: ‘By their fruits (effects) you will know them.’”

Model.

Marxism’ -- With certainty we know from released state archives of former communist countries that in some seventy years those countries, by state order but “in the name of some form of Marxism” have killed some eighty-five million people written off as “deviants”. We now have an ‘effective’ (integral) based on effects made clear - at least partial information regarding the - conceptual content of ‘Marxism’

Note.-- Do we think of “Nazism”.

Content/Size.

In 1905 Peirce says: if a certain precept is converted into praxis by means of an experiment - in which the content of the concept is tested by means of samples from the scope of the concept, i.e. the applications - then a well-defined determination follows which reveals the true content of the concept.

Platonic: lemma/ analysis.

An untested concept content is a lemma, i.e. a (largely at least) unknown, an x, a black box (black box), i.e. a hypothetical knowing. Only the testing (experiment, application) - called ‘analysis’ by Platon -, immediately reveals the true content of the lemma, i.e. the untested concept.

This method of defining a concept regarding its true, practical meaning was called by Platon “lemmatic-analytic method.” In short, “analysis.

Manly definitions.

Such matter is the object of ‘eristics’, i.e. logic concerning weaknesses. With K. Popper one speaks of “falsification” (false finding), with J. Derrida of “déconstruction”.

1. *Manly definition.*

The protosophists (-450/-350) were intellectuals who defined the concept of “virtuous man” as “the expert man,” who possesses “technè,” skill, expertise.

Socrates, Platon established that for a sophist, unscrupulous expertise was also permissible as eventual usefulness.

Through sampling from the volume.

This is a type of detour reasoning because one pays attention to the fates that result from applying and experimenting with the sophist definition.

If the concepts of ‘soundness’ and ‘expertise’ coincide and if a thief, obviously expert as he is in taking away his neighbor’s goods (his typical technique or skill), is at once sound, then this leads within the ordered society (integrally defined, situated in the context) to consequences to be rejected. In other words: a pragmatic refutation.

Lot analysis.

Define “fate” as “all that happens to men. It is said that Platon here presents a proof from the incongruous. Better: a proof from the inadmissible. Socrates’ reasoning amounts to asking : “What fate does one prepare for if the sophists are right?”

Conclusion.

Only if “expertise” and “conscience” are distinguished but not separated does one prepare a happy fate. It is thus a destiny argument.

2. *Manly definition.*

W. Salmon, *Logic, Englewood Cliffs*, N.J., 1963, 30, cites.

Cephalos defines “justice” (conscientious behavior) as “To tell the truth and return what is owed. Socrates: “If a friend in his right mind (situate in the context) entrusts me with weapons which, when he lost his mind, he (situate in the context) asks for them back, is it righteous (responsible) to give them back to him?”

The conceptual content is assessed by a roundabout means, i.e., a sample from the effects (once the definition is applied or experimented with), i.e., from the scope of the concept advocated by Kefalos.

In other words, “What fate is prepared if one applies Kefalos’ definition just like that?”

Proof from the absurd. (absurd).

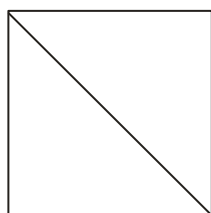
Platonically, this too is a kind of “analysis” reduction.

Bibl. sample: D. Nauta, *Logic and model*, Bussum, 1970, 27v..

The author outlines the historical context.

1. The paleopythagoreans (-550/-350) discovered that within their number-lens system of the time (they only knew natural numbers ((0), 1, 2, 3 ...)) the ratio “side to diagonal” within a square was not expressible in their natural numbers.

Note.-- Now we say, “ $\sqrt{2}$ (square root 2) is not a rational number”. Which means : “ $\sqrt{2}$ is not expressible as a fraction of integers”.



Note.-- According to the theorem of Puthagoras (Lat.: Pythagoras), the length of the diagonal is equal to the square root of 2. Or : the square of the length of the diagonal is equal to 2 ($= (\sqrt{2})^2$).

Note.-- We, now, dispose of the square root. For example, the square root of 2 ($\sqrt{2}$).

2. They reinforced this observation by proving that it is impossible to find a fraction of integers for $\sqrt{2}$. They did this by means of a proof from the preposterous, i.e., from the preposterous proper to the contrary.

In other words: the opposite is unthinkable. -- We now reproduce what D. Nauta expresses in this regard.

Given.-- The square of $\sqrt{2}$ (root 2) is 2. This is the definition of our current symbol $\sqrt{2}$.

Asked -- $\sqrt{2}$ is immeasurable. I.e. : there is no fraction of integers equal to $\sqrt{2}$.

Evidence.

We posit the existence of the opposite, i.e., a measurable concept (definition) in rational numbers, for $\sqrt{2}$.

In other words, “There are two numbers P and Q such that $P/Q = \sqrt{2}$. This is the opposite as a hypothesis.

Simplification.

We “divide away all the common factors of P and Q.” This gives the simplified form P/Q.

Well, (1) p and q have no common factors;

(2) $p^2/q^2 = 2$ (which follows from the given).

From (2) it follows that “ $p^2 = 2q^2$ ”. That means that p^2 is an even number. But in that case p must also be even : “ $p = 2r$ ” (p is twice a certain number r).

It then follows from (1) that q must be odd. On the other hand, as a consequence of (2), it holds that $q^2 = p^2/2$.

Now replacing p with $2r$ gives " $q^2 = 4.r^2/2$ " which is reducible to " $2r^2$ ". But this implies that q^2 is even. Which in turn implies that q is also even.

Conclusion.

If a formula p/q exists, then it follows that q must be both even and odd. This is contradictory, impossible and therefore unthinkable. Absurd. Incongruous.

Explanation.

1. The Pythagoreans did not revise their number concept. Namely, by putting immeasurable or irrational numbers first. That is its historicity, i.e. the fact that their number mathematics is limited to the axioms of their milieu and epoch.

2. What they did see, is that within their axioms no measurability concerning the number value of $\sqrt{2}$ (diagonal of square) was conceivable. That is the typical mathematical historicity of their number concept and its contents. Consequence: they could not extend its scope to irrational numbers, for example.

Structure.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 567.

The proof from the incongruent is a detour proof. There is no direct access to the measurable being of $\sqrt{2}$. Lahr: "This kind of proof leaves the notion of $\sqrt{2}$ as unmeasurable as a mystery."

Situation in a context (structure).

In virtue of the general ontology and the logic established thereon, the notion of dilemma (either a or non- a) is given, i.e. a radically opposite pair. One situates the true being (forma) of $\sqrt{2}$ (always thought of within the purely natural numbers) within that oppositional structure, or context.

And based on that torque, one designs the opposite, i.e., a fracture that is measurable.

This one is a lemma, (introduced on the basis of a dilemma), i. e. a hypothetical definition of the conceptual content of $\sqrt{2}$, i. e. the given (GG). But radically opposite to the requested (GV).-- See above.

To that opposite one then applies the deductive method: if such a definition would hold, then what refutes that definition follows (here: q as both even and odd number). Something is either an even number or an odd number! The contradiction axiom'.

Converging definition.

Bibl. sample: H. Pinard de la Boullaye, *L'étude comparée des religions*, (The comparative study of religions), II (*Ses méthodes*), 509 / 554 (*La démonstration par convergence d'indices*).

Judicial scenario.

Derrick arrives in a village where there was a quarrel with a tragic outcome (a singular fact). But (and this is where the question begins) one tells this, another that, a third something else. The true event does shine through in what has been told, but finding out the truth, x, the unknown, requires research, i. e. a series of purposeful actions (dynamic system). This time, however, the algorithm is a searching series, succeeding and failing.

Note -- Children love such a searching series of samples: 'treasure hunt'.

Induction.

Instead of repeating tested samples (repeated induction), one usually takes haphazard or as good as haphazard samples (probing induction).

Concurrence.

If they converge in the same direction (definition) (eliminating divergent samples) and do so cumulatively (accumulating), then one can define x, the sought.

Indications.

Indica' (lat.) -- These make up one system, (like the axioms of a definition), i.e. must be mutually independent and yet unified". Only then do they provide 'information' (definition data) and grow into an (approximate) conceptual content of x, the true event. I.e. a definition which rises from the extent of the indicia as a summary (summering).

Lematic-analytical.

Platon is known as the founder of this method of definition.-

a. Lemma.-- As a preliminary definition, e.g., the first story heard.

b. Analysis.-- Situation (integral definition) in the data produced by the praxeological series of research acts. Thus, the lemma is tested by Derrick's growing samples, the context.

Note -- I. Newton (1642/1727) defines convergence mathematically: just as a regular polygon approaches the circle as a limit (limit) when its sides are multiplied endlessly, so does the convergence proof.

That "model" (definition) is only approximate correct:

Newton's notion neglects the erratic order of samples (while his regular polygon changes non-erratically. After all, he is too regularly changing!).

Idiographic definition of uniqueness.

Bibl. sample: H. Pinard de la Boullaye, *L'étude comparée des religions*, II (*Ses méthodes*), Paris, 1929-3, 509/554.

A singular thing exists precisely once. The extent of the conceptual content is precisely one instance.

Generalization.

Thanks to samples in the unique given (induction) one discovers in itself not always decisive stretches which o.g. of accumulation delineate the unique, the whole unique and only the whole unique against the rest (division) so that its being in its uniqueness is exposed and becomes definable.

Lemmas.-- These are of two kinds.

1. DNA (deoxyribonucleic acid). Genetic research (analysis) immerses this lemma in its context, namely, the individual's own nature.

2. An appropriate chreia. Jesuits of Coimbra (Portugal), in their *In universam dialecticam Aristotelis* (1606), established a distich (two-line verse).

2.1. Lemma Forma (general being),-- figura (view), locus (place), stirps (descendant), nomen (name), patria (fatherland) tempus (time) unum (the unique) perpetua lege reddere solent" (define usually according to a fixed structure)".

2.2. Analysis These commons together, once situated in the research data (scope), define by interpretation.

Thus: woman (forma), small (stature), Antwerp (place), of begotten family (descent), Roxanne (name), Belgium (fatherland), date of birth (time).

This grid once filled in makes confusing if not impossible then difficult, defines.

Note -- Theories of Understanding.-- Since Greek antiquity there has been a tendency to favor the general. "Omne individuum ineffabile" all that is individual is indefinable.

Note -- This is true if one limits oneself to short, abstract,-- binomial sentences.

Another adage: "Non datur scientia de individuo" concerning all that is singular, there is no science.

The conimbricenses (Coimbra Jesuits) broke somewhat with this tradition. But especially Romanticism (1790+) emphasized (against rationalism) the one-off in persons, landscapes, cultures, etc. They brought about the idiographic sciences, treating the one-off as an object. Think of geography and history. Which especially promotes living people as objects of knowing. Yes, all that is truly alive is one-time in a strong sense.

Dialogic induction.

She is Globalisation (‘Whole-ization): “If all opinions are considered, then perhaps (note: Platon remained searching all his life) the whole phenomenon shows itself.”

Platon, in *The State*, seeks the definition of “dikaiosynè,” Lat.: iustitia, justice (conscientiousness). The lemma, one of the definitions in circulation, is analyzed as one by one “the opinions” - sometimes strongly deviating from the socratic-platonic are discussed.

Thus: Cephalos (commercial ethics), Polemarchos (the circle of friends), Trasumachos (cynicism), Glaukon (compromise morality), Adeimantos (opportunism) define-each from his own sample (= perspective)” what constitutes “conscientious behavior.”

The originally vague lemma gets a ‘face’, i.e. becomes a precise(er) concept of ‘justice’. Immediately one gets a view of the whole. This through partial insights. It becomes an ambiguous whole.

The stakes. - Two main positions.

The protosophists (-450/-350) on the one hand, and Socrates and Platon on the other, talked about the following scheme:

unscrupulous incompetent	unscrupulous expert	conscientious incompetent	conscientious expert
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A sophist did not look so closely at conscience: as long as one had ‘technè’, Lat.: ars, skill, expertise, in land- or shipbuilding, especially in eloquence (rhetoric) and politics. Whereby the Sophists weighed in on the education of the youth and policy in the city-state.

Socratic. In order to reverse these very negative influences, Socrates and, in his wake, Platon attempted to arrive at a true and responsible definition through discussions of “conscientiousness” and to do so inductively, i.e., by sampling the extent of what they advocated as conscientious behavior. The material was provided precisely by the opinions.

Democratic. 1. In the agora (people’s assembly), since very ancient times, everyone was in principle considered a citizen of the state.

2. This is already reflected in the *Historiai* of Herodotos of Halikarnassos (-484/-425), the father of explorations (“historiai”) of peoples and countries (W. Jaeger). Commonly called “the father of historiography.” Herodotos first allows others to speak before expressing his own opinion. This democratic tradition is essentially dialogic induction.

9. This ninth section is a doctrine of judgment.

All logicians argue that the link “subject (original)/subject (model)” in the thoughtful judgment relies on comparison. Not all logicians assume this for unthinking judgments. Yet a Lahr believes that “I exist” or “It’s snowing” relies on comparison.

I.1. Nuances.

1. Attributive (topic-specific) and adverbial (phrase-specific) modalities sometimes thoroughly nuance a judgment.

2. The context too, said (“Hilde walks”) and unsaid (“Thou, smarty”), nuances the judgment. A judgment is a quasi-closed system.

3. The quality of a judgment depends on the saying as a model/ intermediate model/counter model. The intermediate model is restrictive (with caveats): “Christianity is in some sense a humanism” e.g. Quantity depends on the scope of the subject.

I.2 Judgmental truth.

Logic reduces to the strict connection between preposition and postposition and thus knows only true or false (in virtue of the contradiction axiom).

Note.-- Logic mixes logic and epistemology: now testable/ true/ untestable (because now untestable concerning truth)/ now testably false (this is called “trivalent logics”).

I.3. The term “not.”

The term ‘not’ can correlatively/ differentially/ privately/ contradictorily express a judgment as false.

II.1 The implication

The implication - logically speaking - is always meant to be hypothetical though it is categorically stated.

As an aside, condition is either sufficient (conditio quacum semper) or merely necessary (conditio sine qua non). The reciprocal condition reads “Only if” or “If and only if”.

II.2 The immediate distraction.

This one does not seem to have to take a three-part form.

a. Analogical induction reasons from established relationships to determinable ones.

b. A-Fortiori reasoning reads “If already (reason), then all the more/less reason”.

In fact, the logical connection in the immediate derivation is so ‘obvious’ that it can be said to be valid as an intuitive fact. An ‘intermediate’ (syllogistic) form is not necessary.

All judgments rely on comparison.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 226s..

1. All logicians argue that judgments, insofar as they thoughtfully think the subject (original) including the saying (model), rely on comparison because to compare is to think something including something else.

2.1. Aristotle and with him a whole series of logicians (in antiquity, middle ages, up to the present) argue that even unthinking judgments (concerning reason or ground, i.e. comparing) rest on comparing.

J. Locke (1632/1704): “A judgment is the sensation of either fitting together (affirmative judgment) or not fitting together (negative judgment) of two contents of consciousness already observed and compared.”

2.2. Other logicians, such as Th. Reid (1710/1796), V. Cousin (1792/1867), argue that sentences such as “I exist” or “I suffer” or “It is cold” or “It is snowing” etc. do not rely on comparison because the judgmental is only able to really and consciously compare after the fact.

Criticism.

a. There is thoughtless, unconscious, thinking. Children, for example, master their language without ever having consciously and thoughtfully studied grammar. There are, as it were, unconscious structures at work in all of us.

b. Nevertheless, we check by examples.

“I exist” or “I suffer”. -- I experience myself as existing or suffering. This includes, “I think of myself including existing or suffering and so I speak of myself in terms of “I exist” or “I suffer.”

My language vocabulary (context) which provides the necessary terms and relations (we all live in a language community), provides me with the necessary terms to express “I exist” or “I suffer”,.

“It’s snowing. I experience and at the same time think the phenomenon of ‘snowing’ as a fact which characterizes the weather. I think the weather including the actual snowing and o.g.my vocabulary (context) which provides me with the words, I express myself in terms of ‘snowing: peculiar to the weather.

Do we note that opposite “I suffer” or “I exist” or “It snows” the non-existence is possible and thought. That too is including (the negate) thinking and speaking about it in terms.

With attributive and adverbial modalities.

Bibl. sample: G. Overdiep, *Modern Dutch grammar*, Zwolle, 1928, 13/15 (*Logical modalities*).

A proposition, i.e., a judgment expressed in terms, includes, colloquially, a subterm whose inflection (inflection) depends on the verb (the subject), and a subterm that is a verb (the predicate).

Both subterms may be assigned clauses that nuance the judgment as a whole.

1. *Attributive modalities.*

These nuance the issue. -- Thus: “She, the pretty girl, had an immediate influence”. “The beautiful girl”, a noun, is apposition to “she”. This apposition involves the reason for the saying (replaces a reasoning sentence).

2. *Adverbial modalities.*

These nuance the saying. We arrange them according to strictly logical modalities.

(1)-- *Necessarius.*

“Inevitably, a girl appears on the beach.

(2) -- *Potentialis.*

A multitude of nuances occur here, all of which do not necessarily (coincidentally) or possibly express themselves.

Realis.-- “Actual girl appears on the beach”.

Concessivus.-- “Nevertheless (and yet) a girl appears on the beach”.

Interrogativus.-- “Does a girl appear on the beach?”.

Dubitativus.-- “Would a girl appear on the beach?”.

Conditionalis.-- “Under this condition, a girl appears on the beach”.

Irrealis.-- “No girl actually appears on the beach”.

Verisimilis.-- “Perhaps / maybe (it seems) a girl will appear on the beach”.

(3)-- *Impossibilis.*

“Impossibly, a girl appears on the beach.

Here is a refreshed list of adverbial nuances which specifies the triadicity of the most general logical modalities. It can be of the utmost importance to grasp one of these nuances correctly in order to estimate the correct scope (degree of truth) of a judgment.

The said and unsaid context.

Thesis: without distributive or collective context, terms are often undecidable. Thus the term ‘modality’ meaning psychologically ‘reservation’, legally ‘attached condition’, Hegelian ‘mode of appearance’ (of the idea). - However, an analogy does show itself in research.

A. Proverbial context. (modality)

A few examples.

1. Understanding.

The term “greater than” is isolated undecidable. Mathematically situated it acquires meaning in e.g. “3 greater than 2”. In “His authority is greater than hers” it acquires psychological meaning.

2. Verdict.

The term “Hilde runs” lapses into two meanings.

a. Distributive.

That judgment can mean “Hilde is a runner” (as a profession or secondary occupation). Hilde is then one copy of all that is a runner. On the basis of similarity to other runners she belongs to her class.

b. Collective.

The term “Hilde is running” can also mean “Hilde is now running” (durativum of ‘walking’). If so, Hilde is a system that, in addition to a great many aspects, also exhibits the aspect of ‘to run’, as a part, a moment, of her whole being and life course.

Conclusion.-- A term -- concept, judgment, reasoning -- may appear to be a closed system (existing in itself). But then it decays into a lemma to be defined.

B. Unstated context (modality).

To someone who makes a mistake, you say “Thou, clever one”. To people who surprise you, you say “It’s not true after all!”.

In such a context, better: situation, “clever” and “not true” mean just the opposite of the “normal” use of words.

Analogously, “Wait, dude!” What to wait for can only be seen from the context, better: whole situation.

Quasi-closed system. Terms -- concepts, judgments, reasoning -- are closed systems (totalities) but not completely: they are quasi-closed, i.e., in all isolation open to contexts and situations. Those contexts or situations are depicted in the terms which thereby become decidable(der) in their meaning (conceptual content). In itself ambiguous. In context or situation unambiguous.

In other words, by being situated in their scope, they acquire definitive meaning. Samples from the scope of understanding thus illuminate the content of understanding.

Quality/quantity of judgment.

The main modalities of subject and predicate.

1. *Quality.*

The saying can be model, intermediate model and counter-model. These are identifiable modalities. Thus: “That wall is white” (affirmative). “That wall is not white” (negative). “That wall is neither white nor non-white” (nuancing), to express the in-between, the restrictive.

Models.-- Now for some tone of voice sentences.

a. “The case looks questionable”.

‘Questionable’ indicates a whole (“totally questionable”). But “The matter looks rather questionable” expresses a part of the whole. Questionable with reservations viz. not just questionable, not totally questionable.

b. “That wall is white and not white”.

Again, part of the whole. Two house painters in front of a wall with a knowing eye: “That wall is white and not white”. Meaning: “That wall is (if not entirely white can still be called white) white and (if not entirely white should not be called white) not white”.

It is not the contradiction axiom that is being cracked here. It is an intermediate expressive figure of speech. White with reservation. Restrictive.

c. “Christianity is in some sense a humanism (and in some sense not a humanism)”. The intermediate model: “in a certain sense”.

a. If one defines “humanism” exclusively (totally) with respect to religion (“Humanism puts man at the center and excludes religion”), then Christianity is not humanism.

b. Defines ‘humanism’ inclusively (not totally) (“Humanism does put people at the center but does not exclude religion”), then Christianity is a humanism”.

2. *Quantity.*

The topic may or may not be explicitly accompanied by a quantitative modality.

Distributive: just one bird (singular), several birds (private), all birds (universal).

Collective: just one feather of the bird (singular portion), the feathers and head of the bird (private portions), the whole bird (universal quantifier).

Note: “People are mortal” does not explicitly say “all people” but at least thinks it. Not everything that is thought is said. The unsaid sometimes says more than the said. This is true in natural logic that calculates with a context to understand, -- to understand whole and all.

Judgmental Truth.

Bibl. sample: G. Jacoby, *Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, (Logisticians' claims on logic and its historiography), Stuttgart, 1962, 55ff..

'Proposition' and 'judgment' translate 'apophansis' (Gr), Lat.: enuntiatio, iudicium, i.e. to expose by speaking out.

1. Logical.

Since Aristotle, "apophansis" means "assertion that is either, well true or false.

Note -- This dichotomous notion springs from the principle of contradiction : "Something, in this case : an assertion, is either true or false".

Understood: there is no third possibility. Logic adheres to textual formulation. Whether its truth can be tested against additional textual reality is a matter of epistemology and ontology. Not of logic. Logic pays attention only to textual, comprehensible contents and their connections (especially of "if/then"),

2. Logistic.

However, propositional logic constantly involves epistemological testing in its theory of truth. She is essentially extra textual.

Model.-- Let us take the sentence or proposition "It is raining".

a. Logic. -- Whether it is in fact, determinable (testable and therefore decidable epistemologically speaking), raining has no importance in logic. That would be the domain of applied logic or methodology.

b. Logistically.-- In propositional logic, however, this is precisely what is decisive: at the moment the sentence is uttered, its (un)truth must be testable (= according to Nelson Goodman (1906/1998) either tested or untested). Then, after all, it is decidable.

1.-- "2 x 2 = 4". -- It is now testably true that 2 x 2 = 4. This is all the easier since that sentence is always true. After all, it is always testable that "1+1" is thought twice after one to see its truth anywhere in the world. The actual verifiability is "eternal!"

2.-- "I will be in Warszawa in a year." -- Here neither the transient nor the eternal actual truth is, as yet (*note*: logistics is obliged to introduce the concept of time), testable (= untested according to Goodman). Consequence: at present there is only undecidability.

Note -- Unlike logic where the principle of contradiction dominates, here one arrives at a trivalence: either true (tested) or false (tested) or undecidable (true or false).

Not (as a modality).

Bibl. sample: D. Mercier, *Logique*, Louvain/ Paris, 1922-7, 108.

A.1.2. Correlative negation.

“The mother is not the daughter. The basis is a reciprocal relationship: although the mother and because she is the mother of it, she is therefore not the daughter.

A.1.2. Differential negation.

“Rainbow red is not rainbow green”. The basis here is a differential consistency, all the colors of the rainbow, (system). Though indistinguishable yet distinct!

A.2. Privileged Denial.

“This blind man does not see.” Now the basis is the normal case, namely, it belongs to the nature (forma) of man that he/she sees. ‘Not’ expresses deprivation (coincidence) of something that would be ideal. Something that should be there.

Note -- Positivists as purely adhering to the purely determinable (“the definite or positive”) deny as indeterminable e.g. to a blind person the normal or ideal peculiar to nature. ‘Privately’ not is therefore meaningless to them.

Note -- This type of “not” is often found in the language of the frustrated (disappointed). “Life has not given me what might have been expected of it”. In this the neurotic bitterness that does not properly process being deprived can express itself.

Note -- The notion of an empty collection.

This is defined as the presence of a common characteristic (abstract basis) but in the absence of even one ‘element’ (specimen that realizes that common characteristic).

Natural-logically speaking, that non-existence of specimens (‘realizations’) is a case of deprivation. And that is, of what one normally expects. Ontologically, however, an empty collection is actually ‘nothing: a form of relative nothingness.

B. Contradictory negation.

“Being is not nothingness.” -- To say “the absurd” or “the absolute nothing” is to say absolutely nothing! One can say e.g. “a round square” or “an unfelt pain”, but one cannot think such a thing. For such words represent neither a conceptual content nor a conceptual scope.

As D. Nauta, *Logic and Model*, Bussum, 1970, 27v., says: the proof from the incongruent satisfies the given but not the demanded, where that demanded is that the provisionally introduced model (counter-model) is not even conceivable, if anything.

Conditional judgment.

Implication (entailment) is expressed in “if, then” or “own to” or “entails”: “If A, then B” or “B is own to A” or “A entails (implies) B”.

1. *Categorical judgments.*

“A: I am walking in the rain”; “B: I am getting wet”.

2. *Hypothetical judgment.*

“If A, then B”.

Filled in: “If I walk in rain, I will get wet”. The reality of B is made possible by the reality of A. Or: A is condition (necessary/sufficient) of B.

‘Cause’ is definable as sufficient condition and ‘factor’ as necessary or partial condition.

Typology.

‘If’ hides in a multitude of words. Immediately also ‘then’ of course.

1.1. *Because.*

“Because a material body is heated, it expands” becomes “if a material body is heated, it expands.”

This in virtue of heat laws of physics.

1.2. *Because.*

“As soon as he sees her, he cannot resist her” becomes “If he sees her, he cannot resist her.”

This is based on a psychological law (with exceptions): an unconscious or subconscious motive causes (among other things) “not being able to resist”. In which free will sometimes plays virtually no current role.

2. *Because.*

“Because the girl came, the café owner was satisfied” becomes “If the girl came, the café owner was satisfied”.

This is based on a psychological law (with exceptions) and takes the form of a conscious motive (the boss had too much work).

Conclusion.

The propositions introduced with ‘because’ (type 1) and ‘because’ (type 2) differ considerably from each other and from the proposition introduced with ‘because’: physical, psychological (unconscious process), psychological (conscious).

The event represented by the three sentences is not the same in terms of forma (being, structure), although - but neglecting the richness in terms of reality aspects that the not strictly reasoning language respects - one can reduce the event to the same conditional formulation.

Condition and mutual condition.

By way of introduction.-- Natural logic sharpens the eye for seemingly singular sentences that are in fact e.g. a conditional sentence. E.g., "Only God is primordial". This implies: "If God, then primordial power and if primordial power, then God" or "If and only if ...".

Bibl. sample: K. Döhmann, *Die sprachliche Darstellung logischer Funktoren*, (The linguistic representation of logical functors), in: A. Menne/ G.Frey, Hrsg., *Logik und Sprache*, Bern/ Munich, 1974, 46ff ...

We paraphrase.

1. *Embrace (Implication)*

"If A, then B", But also: "At A (I think of) B"
or "From A follows B" or "B not without A" or "A and therefore immediately B".

a. *Conditio quacum semper.*

Sufficient condition (no further conditions necessary).

Thus: "Always if roses than thorns" or "No roses without thorns".

b. *Conditio sine qua non.*

Necessary condition (others may be equally necessary) .

Thus: "If sufficiently outgrown plants then thorns".

Note -- "No thorns without roses" would be wrong.

Psychological-Scientific Application.

"Tell me what values ye hold, and I will tell you what soul (understand: personality) ye are." Thus one can formulate the main thesis of the cultural or structural psychology of Ed. Spranger (1882/1963).

Application

"If profit, then valuable" thinks, consciously or un(der)consciously, the economic man. "If God, then valuable" says the religious man.

In other words, "If thou tell me what thou esteemest, I will logically decide therefrom (on the basis of researched material) what soul thou art." Which, of course, presupposes fact-finding and interpretation.

2. *Mutual Containment.* "Either both, A and B, or neither." (Understood: in no case either one). Or: "The two at once or none". Or "A is necessary and sufficient condition of B and vice versa". Or "No A without B and no B without A".

Classic formulation: "If and only if A then B"

An application was already given at the top of this page, "If and only if God, then primal power and vice versa."

How about: "The good shepherd herds his sheep"? Where is the conditional sentence?

Immediate derivation: analogical induction.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 608ss..

The mean mind:

“If the Earth and Mars are both planets AND the Earth has an atmosphere, would Mars not also exhibit an atmosphere?”

Model Theory:

From Earth (model providing information) to Mars (original requesting information)! -- The comparative method sets off in this regard.

Structure.

Given.-- Earth and Mars belong to the same set by virtue of a number of common characteristics (spherical shape, axis rotation, orbit around the sun, for example).

Asked -- Well, the Earth exhibits an atmosphere (incidentally main condition of life). So wouldn't Mars also exhibit an atmosphere (and perhaps life)? That would be one more common feature.

Similarity gradation.

One reasons from established resemblance to ascertainable resemblance(s). From a certain degree of similarity to a higher degree of similarity.

Comparative sciences.

To that tune, comparatism in science proceeds. From comparative natural sciences to comparative cultural sciences. E.g. the comparative science of religion.

Stretches.-- Variants.

- a. Concordists pay one-sided attention to similarity (resp. coherence).
- b. Differenti(al)ists pay one-sided attention to difference (resp. gap).
- c. Identical logic tries to keep the right middle ground: it upholds the pure concept of comparison.

Sample.

J. Priestley (1733/1804): rust, combustion (= oxidations (oxygen processes)) build off matter: would all other oxidations therefore also build off matter?

Light, Uv rays, heat rays, are vibrations: so would all be governed by the same laws?

G. Saint-Hilaire (1772/1844), embryologist, was the first to note the role similarity between arm (human), paw (quadruped), fin (fish).

Following in the footsteps of G. Cuvier (1769/1832), founder of paleontology, Saint-Hilaire founded comparative anatomy.

Behold some samples from the natural sciences.

Immediate derivation: a-fortiori reasoning.

The mean mind:

“One would already jump out of one’s skin for less (*op.*: reason)!”. Subverted: “Already for a lesser reason ...” Or: “Already there is nothing left. Let alone that ...”.

Model.

“As a heavy hitter, the bouncer had already become more harmless. Now that he also had the mafia on his neck, he created all the less trouble”. From already present reason not to be feared to more reason not to be. This is how the sentence reasons.

Grading on reason or ground.

When comparing - the method - (mathematically exact or purely qualitative) data, it turns out that they are susceptible to gradation in terms of estimation (measurement if necessary). What each time brings a differential (series of differences within one and the same scale)

Thus, someone is “barely/ quite/ strong/ extremely dangerous. - Just as in analogy reasoning, in a-fortiori reasoning the degree difference plays a decisive role. THERE it was similarity or coherence. Now it is “reason” or “ground!”

Axiom.

“If A (already reasons), then B (all the more / fewer reasons). Well, A (already reasons). So B (the more / less...)”. “If A, then B” needs no proof because the common / common sense immediately sees what it is about : gradation in terms of reasons.

Note that there is “a minore ad maius”, from less to more, or “a maiore ad minus”, from more to less.

The axiom “If A, then B” underpins the two further sentences: “Well, in addition to the reasons already cited, there are new ones. So “.

Bibl. sample: A. Lalande, *Vocabulaire technique et critique de la philosophie*, Paris, 1968, 32.

“If one may already kill a thief (as less criminal), all the more so a murderer (as more criminal) like Clodius. Cicero (-106/-43) thus reasoned defended the right to lawful self-defense of Milo who killed Clodius in -52.

It is about the (sufficient) reason that justifies violence as a means of lawful self-defense: one may in conscience kill someone who has it in for your life first himself. Here even gradation is invoked as yet “more sufficient reason”.

10. *The tenth section is a theory of reasoning.*

In “If Prephrase, then Namely (immediate derivation) and in “If Prephrase 1 and Prephrase 2, then postphrase or conclusion (mediate or syllogistic derivation), the prepositional phrases are the phenomenon (= given) and the postpositional phrase is (the solution of) the question.

1.1. *The two basic configurations of J.Lukasiewicz read:*

If A, then B, Well A, therefore B. This is deduction.

Well B, so A. This is reduction.

1.2. *Ch. Peirce’s three basic configurations.*

These signify the great platonic tradition. For the sentences he gives as a paradigm contain both coherence (system: “in this bag”) and resemblance (class: “are equal”). Thus he can interpret the reduction both as a generalization (‘induction’ he says) and as a generalization (‘abduction’ he says). Yet he wrongly unites generalization with causal generalization.

2. *The reason axiom.*

This plays the leading role in reasoning.

2.1. In deduction, one reasons from all (whole) (concept content as reason) to at least one (concept size: samples as application). In reduction, one reasons from at least one sample (concept size as reason) to all (whole) (concept content as result).

2.2. Hegelian thought is “speculative, dialectical” (understand: integral).

The totality is invariably the frame of mind.

Consequence: Hegel does not think the reasons apart from what those reasons justify. He thinks both including the one with the other. He therefore speaks of them in terms of ‘interlocking’. Bolland, on the subject of theft and desertion, shows how precisely reason exists in unison with what is accounted for by that reason.

Note -- In this connection, the reproach by logicians and cognitivists that natural-logical thought schemata are not suitable for reasoning about relations is dismissed by G. Jacoby as projection.

3. Both Platon and Aristotle know deduction (sunthesis analisis; Analutika/Topika)’

4. Examples of deduction and reduction.

5. Hegelian view of deduction (“If A and b equal C ...”) and of reduction (“Der Schluss der Allheit”), (The Conclusion of the Allnes).

In this way we have a rich overview concerning basic forms of responsible thinking.

Rewrite reasoning.

The basic form, platonically speaking, of all reasoning is: “If Prephrase, i.e. the phenomenological pedestal, then Postphrase, i.e. the logical result)

1. Immediate distraction.

The good gardener pays attention to his plants.

a. The gardener who is good takes care of his plants. The relative sentence covers a conditional sentence : “as far as he is good .

b. The gardener, if he is good, takes care of his plants.

2. Medium distraction.

Closure speech or syllogism.

2.1. Mathematical model.

“ $2 + 2 = 4$ ”. -- Logically rewritten, “If 2 and another 2, then 4”.

A universal prepositional phrase (context, co-adjunctive) (= the reason) is unsaid: “Separate sums $S_1, S_2 \dots S_n$ are summed up in a single total sum S_t ”.

As an aside, one application of summary induction (= if all separate, then all joint).

Syllogistic form.

The rule (law) just quoted, which applies generally, has one application in “ $2 + 2$ ”. We say “one sample”. So: “If general rule (law) and if application (sample) of that rule (law), then one logically valid decision”.

2.2. Physical model.

“If it rains, then, by walking in it, I get wet”.

Rewritten, “If it rains in if I walk in that rain, I get wet”.

Now, the fact that I get wet walking in the rain is just one case, application, of a law: “For all cases, if it rains and one (anybody, i.e. all) walks in that rain, one gets wet”.

Syllogistic.

“If general law AND if application of that universal law, then responsible derivation”. One sees : “If Prephrase 1 in if Prephrase 2, then Postphrase”. -- The reason here is in the causal, physical - law relationship “Liquid (rain)/ getting wet”. Physics is teeming with such causal relationships. They are all articulated to the above tone.

Conclusion.-- Pre-sentence 1 and pre-sentence 2 articulate the given (phenomenon) and the post-sentence articulates the requested (sought). Phenomenology and logic walk hand in hand! This is the reason why phenomenology was discussed at such length at the beginning of this course. Phenomenology is and remains the pedestal. Observe what is given!

Further explanations on reasoning.

Bibl. sample: I. Bochenski, *Philosophical methods in modern science*, Utr. / Antw., 1961, 93/95.

Two basic shapes.

Following in the footsteps of W.Jevons (1853/1882), J.Lukasiewicz (1878/1956) proposes the following dual scheme.

If A, then B Well. A. So B. Deduction (Pl.: <i>suntesis</i>)	If A, then B. Well. B. So A. Reduction (Pl.: <i>analisis</i>)
---	--

Infills.

This dual lemma begins to “live” once completed. Descartes’ full sentence.

To demonstrate how the two configurations differ, here is what follows.

C=A: b=C: b=A

All that thinks is (C = A). Well, I think (b = C). So I am (b = A).

In other words: if thinking, then existing as a condition.

The axiom. C=A: b=A: b=C:

All that thinks. is there (c = A), Well, x exists (is there) (b = A). So x thinks (b = C).

Same axiom but the given (phenomenon) is now the ascertainable fact that x exists.

Revocation: not all that exists thinks! In other words: the conclusion is subject to caveats.

The difference between the two types -- deduction and reduction -- lies in the difference of what is given.-- Now for another two-pronged example.

1. Deduction.

Axiom: if all gold melts at 1063° C., then so does this piece of gold. Well, all gold melts at 1063° C. (scientific law). So this piece of gold also melts at 1063° C ... -- The well sentence formulates the law as an axiom that holds. But however valid, deductive reasoning doesn’t actually teach that much new (unless applied). The conclusion is an illustration of the known.

2. Reduction.

Axiom: if all gold melts at 1063° C., then so does this piece of gold. Well, this piece of gold (by experiment) melts at 1063° C.. So all gold melts at 1063° C..

The well meaning sentence formulates an inductive sample. But however invalid as a general law, the sample teaches something new, namely, that perhaps all other gold also melts at 1063° C.. Unless experiments prove otherwise.

“Both in everyday life as well as especially in the sciences one very often applies the reductive rule.” (Bochenski, o.c., 94). Indeed: all experimentation involves reductive behavior. Whether in the laboratory or outside, one reasons reductively.

Peirce 's "hypothesis" ("abduction") correctly understood.

Bibl. sample: Ch. Peirce, *Deduction, Induction and Hypothesis*, in: *Popular Science Monthly* 13 (1878): 470/482.

After the deduction and the reduction (generalization) Peirce situates the 'abduction'. Do we see what he is saying.

Scenario.

A space. A series of bags containing several types of beans. On a table: a handful of white beans. One of the bags contains only white beans. Probable decision: that handful comes from that bag,

Three reasoning types.-- Peirce clearly states.

1. Deduction.-- All the beans in this bag (consistency) are white (similarity).

These beans come from this bag.

These beans are white.

2. Induction.-- These beans come from this bag.

These beans are white.

All the beans in this bag are white (parable, metaphorical model).

3. Abduction.- All beans from this bag are white.

These beans are white.

These beans come from this bag. (coherence, metonymic model)

This is how Peirce formulates the three types. Induction and abduction are reductive reasoning and in this sense opposite to deduction.

Significance.

Peirce made a discovery: he sees - and clarifies this in a simple diagram - that besides generalization (induction) there is also 'abduction' ('hypothesis' or 'qualitative induction'). But what - and this is clear from his explanation - he does not see: that abduction is actually Whole-ization (globalization) in that it rests on coherence and not on similarity.

This is because even a Peirce who held scholasticism in high esteem did not sufficiently center the platonic couple "all/ whole" (distributive/ collective understanding).

Chr. George, Polymorphisme du raisonnement humain, (Polymorphism of human reasoning), Paris, 1997, 113/ 127 (*L' abduction et l'explication*), likewise does not see generalization as the true structure of abduction. Like Peirce, he sees in it a causal reasoning: "These beans come from this bag" however only says that they come from a whole (system). Not that they "come out of this bag" by virtue of some causation.

In other words: causation is only one type of generalization. Precisely because of this, Peirce and George with him miss the broad nature of "coming out of this pocket."

The reason axiom.

Anaximandros of Miletos (-640/-547) introduced the term “archè,” Lat.: principium, premise, reason or ground. Platon stated, “Nothing is without reason,” i.e., without that which makes it intelligible.

The formula now reads, “All that is (so) is (so) o.k. a reason or premise either within itself or outside itself or the two.”

This axiom, unprovable without first having to self-present it, governs logic.

Two main forms.

Either the reason is given or it is sought.

1. *Deduction* (necessary derivation).

Platonic: ‘sunthesis’. The preposition is given.

“If prephrase, then postphrase. Well, prephrase. So postphrase”.

Filled in: “Axiom: if all water boils at 100° C., so does this water and that water. Well, all water boils at 100° C.. So (illustration, sample) this water and that water boils at 100° C.”

2. *Reduction* (non-necessary distraction).

Platonic: ‘analysis’. The preface is the demanded. But the after phrase is given.

“If prephrase, then postphrase. Well, postphrase. So prephrase”.

Filled in: “Axiom: if all water boils at 100°C., then also this water and that water. Well this water and that water boils at 100° C . So (generalization) all water boils at 100°C.”

In deduction concerning the boiling of water, a law, as an axiom, precedes that which knows no exceptions such that the boiling of water is predictable as necessarily derivable.

In the reduction of water boiling, samples are taken first (“this water boils at 100° C.; that water too) but in such a way that when repeating the samples one arrives at the hypothesis ‘generalization’: all water will boil at 100°C. One ‘extrapolates’ from some to all. One ‘extrapolates’ from some to all.

Basic axiom.

The sentence “If prephrase, then postphrase” by way of introduction is the reason axiom but filler.

In deduction, lawfulness (conceptual content) takes precedence as a direct fact (phenomenon) and sufficient reason.

In the reduction, the samples (conceptual content) take precedence as direct data (phenomenon) and provisionally insufficient reason (because it could be that the rest of the samples are negative). - Modally, deduction is a necessary, the reduction a non-necessary (provisional) derivation.

The reason axiom hegelianized.

Bibl. sample: G. Bolland, *Hrsg., Hegel's kleine Logik*, Leiden, 1899,178. The classical formula "Everything has its reason (in itself, outside itself or both)" translates Bolland to "Everything has its 'being' (reason for existence) in something else."

Yet we begin with Bolland's examples.

1. Theft.

An act like theft is a conceptual content with within it a multitude of aspects ('moments'):

1. property infringement,
2. e.g., thief's need for a livelihood,
3. idiosyncratic use of the owner regarding his property.

Thereby, property violation is decisively essential aspect and the other two aspects are incidental.

In other words: Bolland puts forward a creature definition of the act which includes the thief's emergency ('reason' as motive) and the owner's abuse and contains it "in itself". The reasons for the act are not thought of separately from the act but in unison with the act. The first is the formal logic of Hegel's time. The second is Hegel's speculative or dialectical (understand: integral) logic. The *raison d'être* of theft does not lie "in anything else."

2. Desertion.

A soldier escapes a battle "to save his life" ('reason'). Bolland: in that case, he does act against his duty ('destiny as a soldier') in service - substantially and thus conceptually or by creature definition - of his homeland.

Yet one aspect, namely, norm fading in the soul of the soldier, undermines the reason for existence or 'Wirklichkeit' (reality) of the man as a soldier and which is called "his duty" (which in itself should be sufficient). He gives precedence to another reason, namely, that which puts "my life first." Apart from the duty to defend the life and well-being of the fatherland, his fellow citizens.

By thinking "his life" abstractly, i.e., detached from the context of life and total existence, the deserter loses his integral thinking in favor of a one-sided thinking. 'One-sided' in Hegel's parlance: 'abstract'. The logic of Hegel's time must have worked in a very 'abstract' way for Hegel and Bolland to take issue with it.

One may be Hegelian or not but there is truth in the speculative or dialectical thinking so referred to that thinks first and foremost within totalities and situates the reasons therein.

Syllogisms on relations.

Logistics Relevant.

“In traditional syllogistics, reasoning was like ‘An elephant is bigger than a swan. A swan is bigger than a mouse. So an elephant is bigger than a mouse’ was not valid”. (Drs H. van Ditmarsch, specialist in “technical cognitive sciences” (University of Groningen), *Mathematics in Wonderland*, in: *Nature and Technology*.

(1998): 1 (Jan.), 70. Already G. Jacoby, *Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 53, typ:

1. sentences that add a predicate to a subject (S is p) can formulate properties (‘classes’);

2. relations they cannot articulate logically. Consequence: for mathematics and logistics, natural logic falls short.

Behold how Jacoby sees the gross fallacy.

1. *Syllogism.*

“If A is greater than B which is greater than C, then A is greater than C. Well, “elephant / swan / mouse” are one application of $A > B > C$. So an elephant is greater (than a swan which is greater) than a mouse.” This is perfectly natural-logical reasoning.

As an aside, the ratio “ $A > B > C$ ” is a. among others a-fortiori reasoning: “If already A is greater than B, then A is all the greater than C”. Folk-psychology knows this perfectly.

2. *Language.*

a. Terms like A, B, C and $>$ are in natural logic lemmas, i.e. openings for interpretation on analysis. This is rein platonic tradition (similar to the functions of logistics).

b. Natural logic does not work with the separate signs of e.g. logistics. Words, numbers, symbols, drawings, diagrams, etc. are in fact terms, i.e. representations of concepts and relations between concepts. This practically means that “greater than” does consist of two words but is only one term. For “greater than” is one term in natural logic.

Note -- On the surface, Platon is right: a relation is a property or class. How so? If A is thought to include B and it turns out that A is “greater than” B, then “greater than” is a property of A insofar as A is thought to include B.

Morals lesson.

Logicians, cognitivists prefer not to project their own language into logic. For in this way they avoid criticism of their own product: the pot blames the kettle for seeing black.

Platonic reasoning theory.

Platon knows two main types of reasoning.

1. 'Sunthesis' (deduction).

"If A (prephrase), then B (postphrase).-- Well, A (VZ) - So B (NZ)".

If one thinks, then one is.-- Well, I think. So I am.

One recognizes Descartes' phrase "Je pense. Donc je suis".

2. 'Analisis' (reduction).

"If A (prephrase), then B (postphrase).-- Well, B (postphrase). So A (prephrase)".

If one thinks, then one is.-- Well, I am. So I think.-- The inversion changes that actual existence and thinking are one coherence (equivalence). But this is not so.

Reasonaxiom.

Platon knows very well - he had the highly developed sense of "all/ non-all" and "whole/ non-whole" - that any reasoning that skips the reason for its derivation is actually incomplete. Hence, we make the pair "prephrase, postphrase" precede each time.

1. Immediate distraction.

"I think. So I am".

Descartes decides from the given (prephrase: I think) to the asked (postphrase: So I am). But this is the disguised form of what follows.

2. Medium distraction.

This is called "conclusive reasoning" or "syllogism.

"All that thinks is." This is the reason axiom in its application.

"Well, I think. So I am". That's the deductive application,

Platon's sunthesis.

"Well, I am. So I think". That's the reductive application. Platon's analisis.

Note -- The reasoning "if, then" sentence that precedes is invariably based on distributive (collection) (similarity) or collective (system) (coherence) connection (link, relation). Here: thought and actual existence are related (one system). Or: (actual) existence and thinking are sometimes connected.

This entails that the immediate derivation which does not explicitly state the reason, with the phenomenon "actually I exist/ thinking;", also entails the general rule or rather law of thought (given in part) "Everything has its reason, including my present reasoning." There is including of the one with the other.

Note -- Deductive reasoning needs only itself to be valid. From "all" to "just one" or "some" is obvious. Reductive reasoning, however, must be situated in a situation or context before it is valid. This gives rise to lemmatic-analytic reasoning.

The whole of Aristotle.

W. Klever, *An epistemological mistake?*, in: B. Delfgaauw et al, *Aristotle (His meaning for the world today)*, Baarn, 1979, 36/47, denounces the misinterpretation concerning scientific work according to Aristotle. One reads him as if he had written only the *Analutika*. And neglects what could refute such interpretation.

1. *Analutika*.

The theory concerning syllogism, of which, Aristotle is apparently proud (he founded syllogistics) forms the main content.

An “apodeixis” in Aristotle’s language is “demonstrating something to someone. Cf. *Topika* 165a38.

The analytics deal with apodictic reasoning that

- a. put certainties first and from that
- b. deduce in such a way that an audience unfamiliar with the subject (students) is presented with “an educational proof”. Analyticals are engaged in a formal-logical method of expounding already acquired knowledge.

2. *Topika*.

Dialectical (arguing) debate is central. One participant in the dialogue proposes a certain definition, for example. A second, however, attempts to demonstrate its untenability with “dialectical” reasoning.

‘Dialectical’ is what Aristoteles calls - in this he differs from his teacher Platon - a reasoning that starts from non-evident or unproven premises but relies on “*ta endoxa*”, the common opinions. What seems plausible to all or most or experts is a dialectical premise.

In other words, unlike the *Analutika*, the *Topika* focuses on non-apodictic reasoning. These state

- a. experiential data (phenomena) up front and
- b. proceed from there in search of the presuppositions (the ‘causes’ or explanations). “From that which is more familiar to us - *note*: phenomenon - one reasons to that which is without more”. (Phys. 184a11).

Not surprisingly, mathematical, astronomical, or medical explorations are covered here.

Behold what Klever charges: the one-sided reading of Aristotle. He immediately notes that the later Platon axed that foraging work.

Incidentally, Platon’s lemmatic-analytical method proves abundantly that he did not have to learn everything from his student Aristotle.

From conceptual content to conceptual scope.

All deduction exhibits that structure. Dwell on an application.

Bibl. sample: R. Godel, *Une Grèce secrète*, (A secret Greece), Paris, 1960, 236/239 (Le destin).

a. Antiquities - Egyptians, Greeks e.g. - postulated as axiom (= conceptual content) concerning fate(cases) a general cosmic lawfulness ('anankè').

b. This applied to a very wide scope of understanding. Matter, celestial bodies,-- deities, humans, animals, plants,-- i.e. the whole of 'nature' ('fusus', Lat.: natura), once they begin to exist, are assigned a destiny that stands or falls with a portion ('moira') of life force (dynamism) that draws the boundaries.

According to steering science.

The cosmic 'law' is cybernetic: "If a purposeful course has been given and if deviation (coincidence) (border crossing) from this takes place, then with necessity ('anankè') - possibly reinforced by deities - restoration of the order follows. Such is the deductive reasoning.

Note -- Aristotle, *Politika* v: 5, says e.g. that dissenting constitutions provoke 'epanorthosis' (or still: 'rhythmōsis'), feedback. Cf. H.Kelsen, *Die Entstehung des Kausalgesetzes aus dem Vergeltungsprinzip*, in: *Erkenntnis* 8 (The Emergence of the Causal Law from the Principle of Retribution, in: *Erkenntnis*.), (1939); W.B. Kristensen et al, *Antique and modern cosmology*, Arnhem, 1941.

Border Crossing.

Symptoms of this, according to ancient Greeks, are to disrespect one's parents, to overwhelm a defenseless (orphan, old person, woman, begging, pleading). Whoever commits this shows that his soul suffers from 'aidos' shameful form of behavior, which points to 'koros', self-aggrandizement. Yes, to a kakodaimon, a force of doom, or an 'alastor', an evil spirit.

Tempting situations.

If a mortal experiences "olbos," excess in terms of happiness (riches), the temptation is near in "hubris: (deviation) crossing boundaries, to lapse into complacency. If a human being knows "nothing but misfortunes," the temptation to rebel against cosmic law befalls him.

In both cases this crossing of boundaries provokes 'erinus', restoration of order. Something that is often attributed to 'ftonos', Lat.: invidia, envy, of deities who thereby only show their submission to the 'anankè', the cosmic necessity.

From the scope of understanding to the content of understanding.

All reduction exhibits that structure.

Bibl. sample: H. J. Schoeps, *On Man (Reflections of Modern Philosophers)*, Utr./Antw., 1966, 119/141 (*Franz Kafka (The Faith in a Tragic Position)*).

Schoeps, himself a Jew but turned Catholic, knew Kafka (1883/1924) personally. We summarize the main points of what he says about Kafka.

Lot analysis.

The fact.-- Kafka, as a cultural critic, was greatly affected by one phenomenon, namely our modern culture. In our culture man becomes more and more a part of a large, global machine. In it he becomes a “thing-in-this-machine” like a spool of thread within the structure of a modern weaving mill. Equally powerless.

Discontent.

Coupled with that fate is a deep unease because a normally structured person cannot endure in our culture without asking himself profound questions.

In other words: there is a question attached to the fact. Which is the explanation or sufficient reason for our culture and its uneasiness?

1. The talmudic end time doctrine.

The Talmud, i.e. a set of studies (Mishnah and Gemara) on the law of Moses (from the IInd to the VIth centuries), played and still plays a very large role in Judaism. They contain a prophecy of doom : at the end of time “the faces of men will be like the faces of dogs (unscrupulous animals)”. Sign of deviation (border crossing) from the law, resp. the laws of Moses. Sign of a “mondo cane”, a dog-like culture. Behold the law. With its deviation.

2. Application.

“If Yahweh’s law(s) as order, and if deviation from it, then an unholy situation.

Well, mischief. So Yahweh’s order and deviation from it”. From the sting test from the (modern) scope to the content.

a. For the Jew Kafka who, although he lost his faith, still lived from a tradition, the law of Moses “explains” our unhappy situation. For modernity deviated from its law.

b. The absurd.-- Kafka broke his head to know just what constitutes the anomaly(s). These remained to him an ‘x’, an unknown. An unknown, however, that has determining power and thus controls life. Not a merely theoretical ‘x’ as in mathematics. An ‘x’ which weighs in on daily life.

“If a and b are equal to c, then a is equal to b.”

Bibl. sample: G. Bolland, *Hrsg., Hegel’s kleine Logik*, Leiden, 1899, 257.

Hegel summarizes the structure (configuration) of one type of syllogism: “If two things are equal to a third, they are equal to each other.” The two things here are A and b; the third is C.

One knows the role of a catalyst in a chemical reaction, i.e. a substance that activates the course of the reaction but ultimately remains outside of it. It is a mediating role. C is such a mediator.

Example.

Let us suppose: the major term C (in prephrase 1); the minor term b (in prephrase 2); such that C is predicate in prephrase 2 and b is subject in the postphrase.-- Filled in:

C=	A “All mammals (C) are viviparous (A).
b =	C Well, the whale (b) is a mammal (C).
b =	A Well, the whale (b) is viviparous (A)”.

Note -- We write b as a lowercase letter because the lowercase term occurs in the normal syllogism in VZ 2 (containing the lesser term).

Note -- The middle term C is necessary as a catalyst in prephrase 1 and prephrase 2 but it weakens in postphrase

Note.-- One can also configure the syllogism in a linear fashion: “If C=A and b=C, then b=A”.

Note-- Fill in with “All that thinks is. Well, I think. So I am”.

‘All that’ is the major term (all). ‘I’ is the minor term (one instance).

“The quantitative or mathematical reasoning”.

This is how Hegel formulates the basic structure (configuration).

See here how Bolland explains.

Such reasoning occurs in mathematics as an axiom. Well, of this and other axioms it is commonly claimed that their content is unprovable, indeed that they do not even need proof. Yet they are valid, i.e., applicable time and again. Reason: they are normally (if sufficiently developed common sense is present) almost immediately evident and thus ‘phenomenon’ (directly given).

Juisterly stated: Given with every normal form of syllogism. Of course Bolland situates this configuration (scheme) in Hegel’s metaphysics. However, this does not interest us here. What does interest us is this: our human mind is such that somewhere in the depths it contains that structure. With the structuralists one could speak of “an un(der)conscious or depth structure”.

“Der schluss der allheit” (The conclusion of the allness), (Hegel).

Bibl. sample: G. Bolland, Hrsg., *Hegel’s kleine Logik*, Leiden, 1899, 258.

The abstract-general.

Someone tests e.g. sage, mint (peppermint, water mint etc.) - singular plants - for its medicinal powers. Observes that each exhibits something medicinal.- He observes that it is not the individual but the species that is medicinal.

In a comprehensive phase, he assumes that all individual plants of all species are curative. Thus, the genus “plant” as a universal collection is inherently medicinal.

One sees the corridor: from singular over private to universal.

Syllogism.

Prephrase 1.-- If all plants (concept content) are medicinal in any way out, then the species (concept size) and the feathered plants.

Prephrase 2.-- Well, sage, mint, etc. (comprehension, samples) are found to be medicinal when tested (randomly).

Postphrase. -- So all plants -- the genus -- are medicinal.--

The samples - individual and private - are interpreted as conclusive about the concept of the plant as medicinal. Note: the term ‘conclusive’ means ‘decisive’. ‘Conclusion’ even though not all plants, individual or species, were examined (amplificative or knowledge-expanding induction).

Hegelian.

a. There are in the encounter first the individual plants (singular). In other words : they are the first thing one encounters.

b. These, however, turn out to be - always within an attentive encounter with them - the individual display of species (think e.g. mint, goldenrod, sage etc.). This is the phenomenon of the private.

c. But always close in meeting it, our human mind discovers that the types of plants are an expression of the general,--in this case, “the plant.”

In other words, the genus “plant” fans open into an inexhaustible wealth of individuals and species. Like an infinite source of life,-- plant life then.

The “Allheit” with Hegel is not abstract but concrete-general and what is more, the general-the “Allheit”-is also the general. For the genus in species and individuals shows coherence, one great realm of vegetable life forces.

Does one see the difference between abstract-general and concrete-general? Hegel was romantically influenced!

11. The eleventh section contains a syllogism with inductive and deductive applications.

1.1. The mediate derivation includes three terms ($C=A$ and $b=A$. So $b=C$).

C determines the Maior, b the minor, A is the middle term that occurs and disappears.

The combinatorics of syllogisms shows that according to the role of the middle term especially there are deductive (aprioric), reductive (aposterioric) and invalid types. 4 figures \times 64 modes = 256 forms of closing speech, of which 19 are valid and six are actually used.

2.1. Enthymem is the concealment of one of the senses.

3.1. Peirce on Barbara (deduction), Bocardo (reduction: generalization) and Baroco (reduction: generalization).

3.2. Peirce situates Henok and Elias according to Barbara/ Bocardo/ Baroco as people, yes, but special people.

II. Capita selecta.-- is divided into in induction and deduction.

II.A. Induction.

1. Aristotelian induction (the summative) is the core of Socratic (knowledge-expanding = amplificative) induction, -- of which Baconian induction is only the causal form in that it examines the "cause/effect" relationship.

Socrates espouses the method of counter-modeling.

2. The method of counter-modeling (refutation/falsification/deconstruction): "There are so many girls who don't want to marry"!

3. Universal (either 0% or 100%) and statistical (the intermediate values) induction.

II. B. Deduction.

The authority argument ("X claims p. So p is true") must be reduced to the concept of authority as a conceptual content valid for a conceptual scope (domain).

1. Boulder mentality versus boulder science (Mendeleiev's periodic table).

2. Peirce's method of rectitude: revolutionary theories of professional science press are dismissed as "heresies" (sic) by "bonzes.

3. Group axiomatics: for example, the honor code of a community is a set of axioms from which behavior - which often appears irrational - is deduced.

4. Consensus gentium.-- Hegel rightly criticizes "common consciousness" which he believes must be subjected to scrutiny before being credible.

Behold "elements" of natural logic. There is, of course, a great deal more (especially applied logic) to be said about it but this seems to us to be the main one.

Syllogistics: 158 of /256 locking redundancy types are valid.

Three partial terms.

They are compared among themselves (distributively or collectively), within the total term that is the syllogism. Thus e.g.

C = A (Maior):	All water boils at 100° C..
b = A (minor):	Well, this is water.
b = C (Conclusio):	So this water boils at 100° C

“All water” with the larger size contains the large term. “This water” with the smaller size contains the small term. Both terms meet in the middle term, C, i.e., “boils.

Combinatorics.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 519/528.

We summarize this complicated chapter.

A.1. Four figures (schemata). The middle term can occupy four places.

-- ‘Sub’ (subiectum, subject). ‘Prae’ (praedicatum, proverb).

a. Subject in the major and predicate in the minor (sub/ prae).

b. Saying in the major and saying in the minor (prae/ prae).

c. Subject in the major and subject in the minor (sub/sub).

d. Saying in the major and subject in the minor (prae/ sub).

Note.-- J. Lachelier (1832/1918; Kantian thinker), known for his *Du fondement de l’ induction* (1872), distinguishes the syllogisms in :

a and b.-- Deductive (aprioric), deciding from the general to the private or singular (sub / prae and prae / prae).

c. -- Reductive (aposterior), deciding from the singular or private to the universal (sub / sub).

d. -- Invalid.-- Namely prae / sub.

A.2. Sixty-four modes of utterance (modes).

From the subject, the proverb is said (asserted) according to quantity (subject size) and quality (affirmative or non-affirmative). At full combinatorics, this gives 64 allocations of the predicate to the subject.

B. Two hundred and fifty-six shapes. $4 \times 64 = 256$.

B.1. 19 forms only are valid.-- Some names: Barbara, Baroco, Bocardo,-- Celanent, Darii, Ferio et al .

B.2. Five or six only are used.-- Thus Lahr, o.c., 520.

Conclusion.-- The combinatorial ability of humans, especially active in logistics, is enormous. Yet man practically chooses a small number of the combinatorially provided possibilities.

Enthymem.

Let's start with a definition.

P. Foulquié / R.SaintJean, Dictionnaire de la langue philosophique, Paris, 1969 - 2, 215 (Enthymème).- Stellers give three possibilities.

1. Sentence 1 (major) is omitted: "Thou hast lied. Consequence: trust thou no longer deserves".

2. Sentence 2 (minor) is omitted: "All who have lied, deserve no more trust. Consequence : ye deserve none more".

3. The afterthought is hushed up: "All who have lied no longer deserve to be trusted. Well, thou hast lied".

Behold three samples from the scope.

Definition.

An enthymeme is a syllogism of which one of the prepositions or the postpositions is omitted.

La Logique de Port-Royal III: XIV : enthymemes are the ordinary way of reasoning among men, for what is ready from the whole situation (context, co-given) they do not express.

Note.-- Aristotle (*Anal. Prior.* ii:27) defines differently: an enthymeme is a syllogism whose prepositions express either signs or the probable (*note:* what cognitivists now call a folk psychological law (rule with exceptions)).

G. Jacoby, Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung, Stuttgart, 1962, 53/55 (Relationslogik), draws attention to the fact that logisticians forget precisely the enthymemes when they criticize logic.

"If today is Sunday, the day after tomorrow will be Tuesday". Logicians claim that natural logic cannot account for that! But see: "There is a general - applicable to all weeks - order of days "Sunday/ Monday/ Tuesday/ Wednesday/ Thursday/ Friday/ Saturday/ (Sunday)". Well, today is Sunday. So, given said order (*Note:* a summering), the day after tomorrow is Tuesday".

The der days is so established that it may remain enthymem: it is a phenomenon or given.

Susanne Gerritsen, "Het verband ontgaat me" (The connection escapes me), (Understandability! Problems with Concealed Arguments), Amsterdam, 1999, talks extensively about 'enthymemes' ('enthymema', what we have in our minds) and, among other things, the rewriting of texts to bring out the unsaid. However, the problem that the author raises dates back to ancient Greece.

Barbara/ bocardo/ baroco.

Bibl. sample: Ch. Peirce, *Deduction, Induction and Hypothesis*, in: *Popular Science Monthly* 13 (1878): 470/482.

Peirce was already representative of rising logistics with its combinatorics. We are now giving a sample of that.

Barbara (deduction).

We add the terms ‘Rule ; application and result. They show the shifts caused by combinatorics that boil down to filling in places within a configuration. The configuration here is that of the syllogism.

The variants clearly demonstrate the possibilities of the syllogism. Possibilities that many misidentify with the true syllogism.

Rule.-- Most of the beans this bag are white.

Application.-- This handful of beans comes from this bag.

Result.-- Probably most of the beans in this handful are white.

Note.-- Clearly, the structure that founds this thought type is the distributive structure -- from the whole collection to a subset -- Or applied: From the (whole) bag to a part of it.

Bocardo (induction)

Again the distributive. structure but inverted: from the handful (subset) to the whole bag (universal set).

Result.-- But few beans in this handful are white.

Application.-- These beans come from this bag.

Rule.-- Probably few of the beans in this bag are white.

Note.-- Peirce calls this reasoning ‘induction’. Do we understand ‘generalization’.

Baroco (hypothesis, abduction).

We stay within the syllogism configuration but shift to the collective structure (system/subsystems).

Result.-- But few beans in this handful are white.

Rule.-- Most of the beans in this bag are white.

Application.-- Probably this handful of beans did not come from this bag.

Note.-- We call this ‘generalization’. Not from ‘all’ to ‘some’ but from the whole to a part of the whole.

Note.-- Peirce felt difference but he identified it with causal explanation. Which is just one application of generalization.

Henok and Elias: how to classify them?

Bibl. sample: Ch. Peirce, *Deduction, Induction and Hypothesis*, in: *Popular Science Monthly* 13 (1878): 470/482.

The Bible, Gen. 5:21/24 states that Henok was taken away from this earth by God. *2 Kings 1/13* states that Elias was taken up to heaven by God in the whirlwind.

Peirce attempts to situate the two in the form of “modes,” variants, of the basic syllogism.

1. Barbara.-- Peirce begins with this type of syllogism.

Rule.-- All people die. (C = A).

Application -- Henok and Elias were people. (b = C)

Result -- So Henok and Elias die. (b = A).

2.1. Bocardo.-- First tentative induction.

Result.-- Henok and Elias were not mortal.

Application.-- Henok and Elias were people.

Rule.-- So some people are not mortal.

Peirce.-- This reasoning is an induction so tentative that it completely loses its amplificatory (knowledge-expanding) character.

Note.-- Surely ‘complete’ is a bit much to say because the size ‘two’ copies is not nothing.-- Peirce.-- Henok and Elias are examples of a special type of people: the Bible describes them as very religious and God-abiding and therefore immortal. But concluding on the basis of these two cases to the immortality of all pious and God-abiding people is not in it.

2.2. Baroco.-- Also a tentative hypothesis.

Result.-- Henok and Elias are not mortal

Rule.-- All humans are mortal.

Application.-- Henok and Elias were not people.

Peirce. -- Very tentative hypothesis. Maybe they are gods or something. That would be a bold claim. No: we limit ourselves to saying that they possessed a nature of being which was different from that of what we call ‘people’. Thus: “These two were not human beings”. Leaving open what they were.

Conclusion.-- This is a small example of logical Biblical exegesis.

Immediately we see the true usefulness of types of syllogism like bocardo and baroco.

Immediately: what are Henok and Elias now? People because they lived like everyone else seemingly on earth. Special people because their end of life does not conform to the common scheme.

Socratic induction.

Ch. Lahr, *Logique*, Paris, 1933-27, 591, defines: generalization starting from the singular case over further cases to the general concept.

The Aristotelian or summative induction forms the tested core in this regard, for the Socratic induction extends what is common to all tested cases to the testable cases.

What Lahr calls the Baconian induction is just the Socratic induction applied to causal relationships (if one wants: causal induction).

Behold the natural logic regarding induction.

Precise Socrates' method for a moment.

Size.

The basis of all induction is comprehension.

Let us take the definition of “unconscionability! Samples from the scope are e.g. robbing the fellow man of his freedom, hurting him, yes, killing him.

Socrates, however, always kept an eye on the opposite: conscientiousness is, for example, fighting the enemies of the fatherland, punishing criminals, taking care of one's fellow man who is sick, even if this requires painful medical intervention in his body.

In summary, one set of cases where unconscionability is present and another set where unconscionability is absent.

The conceptual content.

From this, Socratic induction now extracts an understanding of definition (content).

If the definition of unscrupulousness were based only on one of the enumerated examples (e.g. robbing someone), the scope would be too limited. On the contrary, one must eliminate the differences between the cases and pay attention only to what is common, i.e. that which makes all the enumerated cases ‘conscienceless’. Thus one arrives at the summary - for to determine the content is to summarize - viz. “Is unscrupulous all conduct that causes harm to fellow men” (for it occurs in all cases).

Yet there are caveats.

Helping the sick fellow man if necessary by “harming” him (through a painful procedure) is not a case of unconscionability!

In other words: the inner intention together with the whole situation ultimately determines what is and what is not unconscionable.

To cause harm to the enemies of the state is another caveat: in that case, “causing harm” counts as conscientiousness!

Rebuttal.

Beginning with calendar humor.

Jan.--"It's almost unbelievable: there are so many girls who don't want to get married".

Hilde.-- "That would surprise me".

Jan.-- "And yet it is so: I can tell! I have already asked so many girls to marry me!".

1. Phenomenological.

The fact or phenomenon confronting Jan reads, "I have asked so many girls....".

2. Logical.

But Jan considers his experiences as samples within a general rule and commits induction. "There are so many girls who don't want to marry."

Model without counter models.

From the highly individual experiences with girls, literally Jan constructs his "model," i.e. concept of "girls who want to marry (or not). But with a twofold omission:

a. he omits the modality "with me";

b. the fact - also a phenomenon - that there are so many girls who do want to get married, he also leaves out.-

The latter expresses Hilde: "That would surprise me".

Counter models.

It is now called "the method of counter models," in the wake of model theory. One used to say 'refute' by demonstrating the opposite. One now also says 'falsify' (K. Popper), i.e. to prove as false or untrue. Also: 'deconstruct' (to reduce a proposition as J. Derrida uses the term). The method of counter-modeling amounts to an emphasis on the facts or phenomena that - in this case: Jan's thesis - refute.

For example, scholars touted Thor Heyerdahl (1914/2002) for paying too little, if any, attention to what refuted his thesis that a portion of the South Sea peoples were of prehistoric South American origin (which he practically sought to make true with his Kon-Tiki).

Conclusion.

Inducing, generalizing, is an art. Sampling without bias is one requirement. Taking sufficient samples is a second requirement. And the scope as well as the content must be checked. Otherwise one generalizes but without a sufficient basis.

Universal and statistical induction.

'Universal' is called that induction which expresses itself in 0 (none) or 100 (all) percent. 'Static' is called that type of induction that expresses itself in there different percentages.

Syllogism.

Bibl. sample: W. Salmon, *Logic*, Englewood Cliffs(N.J.), 1963, 55f. - x % of the instances of a set exhibit the trait k. Well, e is one instance of it. So e exhibits x% probability of exhibiting the trait k.

Appl. model.

These beans come from this bag. Well, these beans are 75% white. So - amplifying (knowledge expanding) induction - all the beans from this bag are 75% white.

Samples.

Induction stands or falls with sampling. For example, in opinion polls: starting from 1,000 respondents (summative induction) one expands to e.g. 6,000,000 Flemings.

1. Concept size (quantitative).

The larger the number of samples the more approximate (a-fortiori) the generalization. -If one tests only two beans from this bag, then that is a narrow base.

2. Conceptual content (qualitative).

The more haphazard ("at random") the samples the more objective (a-fortiori reasoning) the samples. - Primitives speak ethnologists out of turn. The way of asking questions may suggest the answer.

List.

A list is circulating of men who

a. were baptized and raised Catholic and

b. held high political office as extreme rightists: Hitler (Germany), Mussolini (Italy), Franco (Spain), Salazar (Portugal), Pétain (France), Pilsodski (Poland), Horthy (Hungary), Dollfus (Austria), Schusznigg (Austria), Tiso (Slovakia), Degrelle (Belgium), Pavelich (Croatia).-- What probative value does this sample have in the total Catholic world?

1.1. The pure enumeration says nothing about the circumstances that might nuance it.

1.2. This sample should be supplemented (method of counter-modeling) with the list of Catholics - baptized/raised - who held high political office but were democrats. This would constitute a second nuance.

2. It remains of course that in one and the same period so many Catholics - baptized/raised - as the far right, made it as far as they did. This gives pause for thought about the atmosphere in Catholic circles in those days.

Authority argument.

Bibl. sample: W. Salmon, *Logic*, Englewood Cliffs (N.J.), 1963, 63/67 (*Argument from authority*).

The author assumes the actual authority enjoyed by individuals (pop stars e.g.), groups (the research community of scientists), institutions (the churches), texts (the journal *Nature* e.g.) etc. He formulates as follows.

“X claims p. So p is true”.

He then nuances : “The majority, possibly the (over)large majority of the statements of X have been established as true. So (the rest of those) statements will be true”.

Summative induction.

From the assertions established as true (i.e., the summa or totality of inductively tested assertions), those who accept authority reason to the assertions that can be established but have not yet been tested.

The infallibility claim hinges on extending the claims tested as true to those not yet found to be true.

Authority as a concept.

Let us take a physicist. This one, insofar as he is really a physicist, possesses an understanding (comprehensive understanding in the midst of his specialism) of “nature” i.e. in the present conception “matter” and this insofar as accessible to mathematical-experimental methods.

This is: as far as “exact!” This has been the case since the days of Galileo. His understanding includes a number of axioms (e.g., “Everything is determined in its course”), a number of established laws. These axioms and laws are conceptual contents that apply to conceptual domains.

These comprise the physical phenomena which testify of mathematical - experimental nature when investigated. So that actually the physicist in question includes in his mind a network of mathematical formulas and a representation of a number of,--often experiments performed by predecessors. Such then is his understanding of matter and its axiomatics and laws.

Now pay attention: once this expert exceeds “his domain”, i.e. his scope of understanding (all the phenomena), he loses his authority along with his lack of understanding. For his incomprehension begins where his domain (the scope of understanding) ends and thus his “authority” becomes zero.

On the face of it, the authority argument is a matter of understanding logic (content/scope).

Facing rock-hard mentality rock-hard science.

Bibl. sample: A. Crisinel, *Mendeleev (De l'ordre dans les atomes (Order in the atoms), (1869))*, in *Le Temps* (Geneva) 13.10.1999, 56.

1. Of a rock-hard mentality.

First part of the 19th century: chemistry in full development and in full confusion. No coherent classification ordered the then known elements.

1869.-- D. Iv. Mendeleiev (1834/1907), the youngest of a family of seventeen children in Tobolsk (Siberia), studies mathematics and science in Petrograd and chemistry in France and Germany. He sets to work arranging the chemical elements. On a cardboard he wrote, vertically (now it is horizontally), the name of the 63 elements known at the time, each with its atomic mass and main properties.

Discovery.

By arranging them according to increasing atomic mass, he sees that the eigenschappen evolve with them and do so in such a way that a limited series repeats itself after an interval (periodic table).

Open spaces.

Where Mendeleev - reasoning logically through - suspects a hitherto unknown element, he leaves a spot open. Dares to correct some atomic masses because they seem incorrect to him.

Icy welcome.

The publication of his first table was met with a very cool reception by established chemists.

2. To a rock-hard science.-- But the tide will turn.

1875.-- The Frenchman Lecoq de Boisbaudran discovers gallium. 'Gallium' named after the Latin 'gallus' (Lecoq in French is 'The cock'). By which the discoverer wanted to make himself famous. Mendeleev had foreseen it as 'ekaaluminium'.

1879.-- Independently of each other, L.F. Nilson and P.T. Cleve discover the scandium (after 'Scandia', Scandinavia) which Mendeleev had foreseen as 'ekabor'.

1886.-- Cl. Winkler discovered germanium (after 'Germania', Germany) which Mendeleev had predicted as 'ekasilicon'. (Mendeleev died shortly before N.Bohr and E. Ruthrford designed an atomic model that explained the periodicity of Mendeleev's table.

1955.-- Americans discover by synthesis el. 101 that to honor Mendeleiev they baptize 'mendelevium'.

Peirce's method of rectitude.

Ch. Peirce, in a text, mentions the righteousness method as one of the methods that people apply and accuses, among others, the churches of that method: it is essentially a method of authority.

Bibl. sample: J. Margolis, *Ces savants excommuniés*, (These excommunicated scholars.), in: *Courrier international* 195 (28.07.1994), 34. The text is a translation of a text from the *Sunday Times*.

1. Facts.

“Before their theory was accepted, L. Pasteur (1821/1895); founder of microbiology) and A. Einstein (1879/1955), founder of the theory of relativity, were dismissed as “dangerous deviants.” Th. Edison (1847/1931), known for the Edison effect, was accused of deception when he demonstrated his electric lamp.

Brothers Wilbur Wright (1857/1912) and Orville Wright (1871/1948), after their revolutionary flight, were not believed for two years because “science had proved that a machine, if it weighed heavier than air, could not possibly fly.” When Alfr. Wegener (1880/1930; geologist) recited the theory concerning the drift of the mainland, he was ridiculed (...).”

2. ‘Heretic’.

BBC 2, in a TV series ‘Heretic’, posed the question, “How should respected scientific institutions respond when renowned scientists defend revolutionary theories?” The series showed six ‘heretics’ (‘heretics’) who accidentally discovered a new truth “against established opinions” and were therefore expelled from the ‘scientific’ environment.

Comments from thumpers.

J. Maddox, physicist, editor-in-chief of *Nature* (the celebrated journal): “*R. Sheldrake* who in his *A New Science of Life* proposed the morphogenetic fields as a hypothesis (*note*: not yet as an established truth) is replacing science with magic. Such a thing may be condemned with the same terms as those of the popes who condemned Galileo. And for the same reason: it is heresy”.

L. Wolpert (prof medical biology): “The BBC series is an absurd series. The way the broadcasts are recited make me delirious with rage. (...) I have categorically opposed (...).”

Note -- The least that can be said is that such ‘bonzes’ have not advanced anything since Galileo’s conviction!

Group taxonomy.

Bibl. sample: S. A., *Meurtre (L'honneur n'excuse pas tout)*, ((Honor does not excuse everything)), in: *Journ. de Genève/ Gazette de Lausanne* 23.08.1996.

On 10.01.93, an Albanian living in Switzerland kills his wife's lover without being able to kill the latter. Whereupon three months later the young woman's own father kills his grandson and hurts his daughter and granddaughter. The grandfather answers: "I only applied the code of honor (axiomatics) of my community. Actually, I did not kill for no reason. I did, however - he explained to the court - act passionately given the intense state of mind following the duty of revenge".

Bibl. sample: T. van Dijk, *Turkish mores*, in: *HP- De Tijd* 20.02.96.

Steller: "Especially when it comes to acts that, although also punishable in Turkey, are committed to restore the honor of wife, family, sister, the perpetrator himself and for which admiration is reaped in one's own circle."

By gossiping e.g. in a coffee house, honor is tainted.

Note -- This type of heroic morality demands that revenge be taken. The perpetrator therefore considers himself a hero.

Modalities.

That family member for whom imprisonment is the least unfavorable is given the task to avenge, i.e. to rectify injustice. For example: "If the father has died and the oldest son is married and has children, the youngest son avenges himself on 'the fool' who attacks mother".

Axiomatic-deductive behavior.

Axiom.-- "A person whose honor has been violated can only regain prestige within the Turkish community when that honor is restored~

Deductions.

1. "That means that your sister's rapist should be killed.
2. "This means that a son will kill his mother if she engages with other men.

Conclusion.

Given the moral axiomatics within some group, a future restoration of justice ("revenge") is predictable.

Outside the environment - the community - of Albanians and Turks, this easily comes across as "irrational. But within that milieu, this comes across as 'responsible' and 'morally right'. The deductions from axiomata are applied logic.

As la Logique de Port-Royal says, people - mostly - reason correctly but often starting from questionable axioms.

“Consensus gentium”

Bibl. sample: G. Bolland, *Hrsg.*, *Hegel 's little Logik*, Leiden, 1899, 107.

As an acceptable proof of God, Cicero (-106/-43) cites the “consensus gentium” (unanimous conviction of the peoples). Those who reason in this way put forward an important authority argument.

Hegelian.

In the Cartesian tradition, a content of knowledge and thought - e.g., “There are deities or there is the one God” - which is to be found in the common (seemingly ubiquitous) consciousness, is easily interpreted as necessarily being connected with the very essence of that common consciousness. The content is, as it were, an essence property of (modern) consciousness.

Yet Hegel notes that those who appeal to the unanimity argument do not pay attention to the content insofar as accounted for by perceptions or sensations but want to push the mere fact that so many people cherish that content in their consciousness as proof valid in itself.

In other words: not everything that is in the common consciousness is accepted by Hegel as valid evidence.

Indeed.

Hegel appeals to the testimony of ethnologists who, at least in his time, believed they could establish that there were peoples who knew “no deity” (method of counter-modeling). Which, of course, undermines the absolute degree of consensus gentium.-

Note -- Current ethnologists are more cautious on that point today.

Indeed.

If consensus gentium were valid in itself, it would lead to implausible inferences: the Indian belief in sacred cows or monkeys, in sacred brahmins (Indian ‘sacred’ men) or the Tibetan belief in the sanctity of the lama (‘sacred’ man) as a kind of god count as the common consciousness of entire cultures. But on what do they rely?

Conclusion.

Hegel thus sufficiently thrusts forward to the main question, “To what extent is our common consciousness, especially concerning sacred things, ‘real,’ i.e. representation of reality?”

The consensus gentium is **a.** too subjective and **b.** too varied across the planet to count as a representation of reality. It is, however, a lemma, a provisional hypothesis awaiting its ‘analysis’ (testing). Nothing more.

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