10.5 Elements of Logic
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First year: elements of thinking theory (logic)

Contents and Study notes: see p. 108

Preface.-- We first explain the title of the course.

1.-- **Elements.** From antique Greek 'stoicheia' (enk.:stoicheion), Lat.: elementa (enk.: elementum), which meant 'constituents' of a totality. 'Elements' ran in tandem with 'archai', Lat.: principia (enk.: archè, principium), which meant prepositions within a reasoning.

In a more restricted sense, "elements" means the simplest components, accessible to beginners. Thus, one speaks of an "elementary course."

2. -- **Problem/ Solution.** Thinking ancient Greeks,--among the mathematicians, took a reasoned, logical, approach. To this end, they divided all that is, i.e., Reality or 'being', into two treatments: the statement and the solution.

a. -- *The task.*
This includes perceiving the given (Given), i.e. reality that shows itself, -- that is immediately given (phenomenon) and of the requested (Asked) or sought, i.e. reality that does not show itself but must be demonstrated.

In short: showing oneself and demonstrating oneself.

As an aside, the former is the object of phenomenology (phenomenon representation); the latter of logic (reasoning theory).

b.-- *The solution.*
With the logical faculty, who sees reality meets (the given), questions arise and among them one question, which interests us here, in the course Logic, viz: "What can be deduced, concluded, from this (from the GG) ? That is the question (GV). It is precisely this that sets one on the road to the solution. In our case : the logical solution.

Logic (theory of thought. Dianoëtica).
If 2 + 2, then 4".-- "If it rains and I walk in that rain, then I get wet. -- Logic, in the traditional sense, stands or falls on "if-then sentences." It speaks of reality (object of ontology) in conditional sentences that express reasoning.

In short: ontology in "if, then sentences". From a given reality (prephrase: if) one decides on a requested reality (postphrase: then).

Behold the core of logic. Of that, this course gives the elements that make, if, then sentences understandable.

02
A propaedeutic course.

'Pro.paideia' or also 'pro.paideuma' in ancient Greek is introductory teaching ('elementary' teaching). From there 'propedeutic'.

Information and Method.

'Information' is 'intelligence' communication of truth about what is, about being or reality.

1.-- *Information.*

Insightful, yes, but not dilettantically a dilettant(s) "knows something about everything" in an affectionate, superficial way. Nor (hyper)specialist: the specialist(e) knows all about something. Thorough knowledge!

Well as general education. Here reference should be made to a famous example: Harvard University (USA). There it is called "The Harvard Principle", the Harvard axiom. That university breeds (hyper)specialists,--not generalists.

And yet: it does so including general education. For example, to avoid graduates falling into - what the "tender anarchist" Marshall MacLuhan (+1981) called - "professional idiocy": one becomes a professional idiot for want of a broader view which goes beyond the narrowness of specialization thanks to solid information about things outside one's own profession.

Philosophy.

'Philo.sophia', literally: familiarity with wisdom. Now 'sophia: Lat.: sapientia, in fact, usually meant general education. She that philosophy - in an admittedly broader, cultural sense - meant "the broad view of world and life" that ancient Greeks called sofia. In this sense, Harvard with its emphasis on a much broader view than that of the subject idiot is very traditionally Greek!

2.-- *Method.*

Not a fashion. For such is a transient, mostly superficial behavior. No ideology. For such is a set of presuppositions ('prepositions') that testify more to the constructive mind that puts them together than to reality contact.

This course, based on solid information, aims to teach a method. i.e. the reasoned-responsible treatment of the showing (given and asked) so that the showing (solution) is exposed. Method, then, is logic that is metacognition, i.e. knowledge that becomes aware of the acquisition of knowledge. Usually one defines method as "applied logic," where 'logic' stands for "pure or formal, i.e., purely theoretical, logic."

03.

Ontology (reality theory).

It was said a moment ago : a reasoning is - to infer from a reality or being (expressed in prepositional phrases) another reality (brought up in the post-sentence).

From this fact the question arises, "What does the ontology or theory concerning all that is real mean by 'being' ('reality')?" To this question we now answer.

Ambiguity.

The terms "being" and "being" (insofar as the latter is still common) are ambiguous in everyday language. At least to some extent.

a. *As a noun*

are "being" and "being" (the latter then meaning the totality of reality) rather unambiguously.

b1. *As an ordinary verb*

means "to be" "to be discoverable," "to be testable," because denoting existence or actual existence. In "I think (i.e. have a consciousness). So I am" R. Descartes at the time expressed the fact of existence. Likewise in "All that is, is"' Or in "God is".

b.2. *As an auxiliary verb*

it situates the rest of a saying in reality. Thus in "This girl is beautiful" M.e.: as an auxiliary verb, 'to be' helps to represent the essence or being of something that is there. This is evident when one shortens the given sentence to "This girl is" (which only reflects her existence or actual existence. The addition of the adjective 'beautiful' in a saying turns being as an ordinary verb into a 'copulative' verb or auxiliary.

As an aside, we will return to the basic pairing "existence/ essence" at length shortly.

Note.-- Some thinkers -- G. Frege (1848/1925), B. Russell (1872/1979), L.Couturat (1868/1914) and others -- believe that the terms "being" and "being" are so ambiguous that they are unusable in exact, and even in ordinary language.

For example, *I.M. Bochenski, Philosophical Methods in Modern Science*, Utr./ Antw., 1961, 61: "The word 'is' has at least a dozen meanings that differ." He suggests replacing them with artificial but unambiguous symbols.

Yet Bochensky regularly uses the term 'is' in his work and is very precise in his understanding of it! In this way he shows that 'being (the)' is not ambiguous but identifiable. More about this later.

04.

Definition of "reality" or "being".

The term 'onto.logy' is rather recent, as the Cartesian Joh. Clauberg(1622/1665) introduced it. Aristotle called 'ontology' "first or fundamental philosophy" and Platon 'dialectics!-- Onto-logy consists of 'onto-' (being) and 'logic' (bringing up). --

Reality Theory.

Philosophy marks itself against all other sciences in that it is ontology because it talks about the real as real. I.e. insofar as it is real. While all other (professional) sciences aim at some part of reality.

Definition.

'Being' or 'reality is all that is even something, i.e. absolutely not nothing, i.e. non-nothing. Only then, after all, is it identifiable (for only then does it have an identity or a singularity). Identity has something to the extent that it is 'single-minded', i.e. coinciding with itself - as one can see: 'being' can only be defined on the basis of itself - in a single-minded way. For outside of all that is something (non-nothing), there is ... absolutely nothing.

Existence / essence.

Something has an identity to the extent that it answers a dichotomous question.

1.-- How real is it?

To that, all that is something responds with the affirmation that it (is) there. That is with its existence, its being.

2.-- What is it really like?

To that something responds with the affirmation concerning what it is. That is with its essence, its beingness.

These two aspects are distinct but unseparated.

Conceptual content / conceptual scope.

As We shall see further, a concept - expressed in a term - is defined by **a.** Its content and **b**. its scope.

In the case of the concept of reality, the content is "something, i.e. existence / essence". What scope can answer this unless all that is non-nothing, i.e. all being and the totality of being (total reality)? In other words: that to which the content refers is all-encompassing or transcendental. Outside of being there is absolutely nothing (one also says in a figure of speech: "the utter nothingness" which is ... utter or absolute nothingness).

Note.-- Platon of Athens (-427/-347) called the existence-and-essence of something the idea or eidos of it. He, too, already distinguished in it the existence and the essence.

05.

Syntax of characters.

Semiotics (sign theory) distinguishes syntax (interconnections), semantics (referring to something else) and pragmatics (use) of signs. A sign is always first **a.** something in itself, separate from the rest; **b.** after which it is denoted as referring to something else and **c.** is employed as a referential utility.

Thus, a map is **a.** something in itself, **b.** that in virtue of refers to a landscape (resemblance) and **c.** proves to be useful as a referral.

Thus, a signpost is **a.** something in itself, **b.** that refers to a landscape in terms of connection (coherence) and **c.** is so useful.

Do we now dwell on the syntax of signs per se,--unsemantic and unpragmatic. However, these signs are treated logically.

Axiomatic-deductive treatment.
Bibl. sample: J.Anderson / H. Johnstone, Jr., Natural Deduction (The Logical Basis of Axiom Systems), Belmont (Calif.), 1962, 6.-- We reproduce.

1.-- *Axiomatic section.*
Axioms are presuppositions (prepositions). Seemingly haphazardly drawn up sometimes. They are the "if.
Ax. 1.-- If a and b are unequal, then a (b or b (s. '(' means "less than"'
Ax. 2.-- If a (b, then a and b are unequal.
Ax. 3.-- If a (b and b (c, then a (c.

2.-- *Deductive section.*
Theses are derived judgments. Derived or deduced from axioms. Theses are the "then

Thesis to be proved: "a (a is unthinkable" (*note:* impossible, absurd, incongruous, i.e. absolutely nothing). In solving this question one stays strictly within the system (coherent whole) of the axioms stated.

Proof.-- a. We substitute in Ax. 2 b by a. b. Result: "If a(a, then a and a are unequal.

Note.-- Unspoken was the premise that the axiom "a = a" absolutely holds as a law. This premise was thus cracked by substituting in Ax. 2 replacing b with a.-- If one does so, then strictly logical follows from this what is absurd.

Ontological.
The symbols a, b, c, -- (and = a are like blackened paper things in themselves (syntactically). Thus they are not-nothing. Ontologically, they are realities, even though they are not daily realities.

06.

Use of the term "real.

Just now we saw that ontologically speaking signs - symbols from mathematics or mathematical logic - are realities, i.e. testable things. We continue with the analysis of the difference between non-ontological and ontological language.

1.-- *A 'being' that becomes.*

One sometimes hears it: 'Becoming is not being', - tacitly presupposing that 'being' and 'being' denote only unchanging being and being.- That language may be valid in some text about whatever, in ontology it is radically invalid. 'Being' and 'being' denote both becoming and distant and unchanging reality.

By the way: Parmenides of Elea (-540 / ...), a presocratic thinker, seems to have fallen into that trap. Hence centuries of discussions about the yes or no merge of e.g. 'eternal' and 'being(the)', where there are both eternal and non-eternal realities.

2. -- *Dreamed realities.*

It is sometimes said that "dreaming is unreal". This means that the dream contents do not correspond to any realities outside of the dreams.

This is everyday language or even psychological-scientific language but ontologically it is abundantly clear: the dream contents are "something," non-nothing, and thus one type of being or reality.

3.-- *Fantasized realities.*

"Fantasies are unreal" is how it sounds in non-ontological language. Two types.

3.1.-- *Science fiction.*

'Fiction' or invention is unreal. It reads like this.

Yet intellectuals in particular - the more professional and physical the more - revel in long texts that they pertinently know to be a long syntax (concatenation) of imagined "things" (ontologically also "realities" because non-nations).

3.2.-- *Utopian realities.*

From Platon's "ideal society" to contemporary thought products of futuristic or futurological intellectuals, "syntaxes" of imagined societies-optimistic (utopian) or pessimistic (doomsday betrayal)-are in circulation.

However unreal once they are confronted with what is outside the utopias, yet they are in themselves - ontologically - not-nothing and therefore 'beings'.

07.

The construction (structure) of traditional logic.
This course deals with the (main) elements of tradition-based thought:
1.1. *Concept (term),*

1.2. *Judgment (sentence, proposition),*
The elements that are "in depth",

2. *Reasoning (derivation, decision),*
the element that is central, -- that comes "to the surface." In other words, a reasoning involves at least three judgments that are themselves attributions of concepts to other concepts.

If, then.
The actual theme of transmitted logic is the conditional sentence which, from two prepositional phrases, in virtue of the contents of the concepts and judgments used, concludes in a postpositional phrase.

Note -- Keep it well in mind: logic is not an ontology or theory of reality without more. It is not, for example, in this sense an epistemology or science or epistemology. Logic adheres strictly to the if-then structure.

Whether any other reality corresponds to this outside the two prepositional phrases, logic puts in brackets ('Einklammerung').

In other words: logic is only ontology insofar as it uses if-then sentences; it is only epistemology insofar as it articulates if-then sentences. "If it is raining cats and dogs in heaven and I am walking in the rain, I am going to get wet" obviously refers to the sentence itself and not to what would correspond to it .... in heaven itself.

Yet the reasoning is valid.
This is pure logic, not applied or methodological logic. Even if it is said, in so-called categorical wording, "In heaven it is raining cats and dogs. Well, I am walking in that rain. So I get wet" then even in a textbook of traditional logic such a phrasing is only hypothetical and thus a categorical phrasing in the place of a hypothetical formulation.

Theory of understanding, theory of judgment, theory of reasoning
are thus the three great, principal elements of traditional logic,--which in some circles is also called "classical" logic. In it, things expressed in terms of concepts are processed into judgments and situated in a reasoning process. Although reasoning is the direct object of logic, the concepts and judgments remain the indirect object, which is very decisive because it decides on the direct object.

08.
Common sense and logic.

The Cartesian G. Leibniz (1646/1716) said that "the laws of logic are rules of common sense only in so far as they are orderly expressed." In other words: in all human beings there is a basis of logical reasoning.

Common sense.

Cl. Buffier (1661/1737), in his *Traité des vérités premières* (Treatise on primary truths), (1717), responds against R. Descartes (1596/1650; father of modern philosophy).

1. *R. Descartes*

and with him the whole of typical modern philosophy starts from the individual conscious life (inner world) to "ground" (give a firm foundation to) life, thought (science, philosophy). Descartes calls that inner standpoint "le sens intime." That is the reason why one calls this modern thinking "subjectivist. That is also why one calls it 'autonomic', i.e. independent of others. The "autonomous subject or I" is central.

2. *Buffier.*

a Jesuit, recognized that this narrow viewpoint is one-sided, for

a. it ignores the undeniable influence of the environment - the world, called in Cartesian parlance "the outside world" - ;

b. it misunderstands the common mind - le sens commun - which is peculiar to all men in one form or another 'common' here means "what is common to all or common to all".

It is obvious that when Liebniz sees logic present in common sense, he immediately means common sense. It is equally clear that in many people - not all, because it is a statistical rule - common sense is also common sense, which explains why, although they do not know the letter logic, they nevertheless work perfectly logically:

a. they perceive sharply (the fact that they grasp phenomenologically) and
b. they reason equally sharply from the given (the requested).

According to the Scottish school or Commonsensism (Th. Reid (1710/1736)), the continuation of Buffier's basic ideas, common sense possesses logical and mathematical foundational insights such as "the whole is greater than the part" or also ontological insights such as "everything has a cause (within or outside the caused)." Such insights are given with the common sense and are grasped intuitively.

09.

Rhetoric about given (phenomenon) and asked (reasoning).

Reasoning always relies on perception. In other words, the prepositional phrases from which the postpositional phrases are derived are the data that must first be correctly grasped and represented in a definition (creature representation).

Rhetoric (rhetoric).

One also says 'theory of eloquence' or 'theory of understanding'. The rhetorician or - in Latin - orator tries, by describing what is given and especially by reasoning on the basis of the given, to convince his fellow men (pupils, public, buyers etc.) of a proposition (opinion, publicity, slogan etc.). This is called persuasion.

Cognitive structure.

Given.-- The one who recites a proposition (message, information); the message itself; the recipient(s) for whom the message is intended.

Asked -- To proceed in such a way that the message "goes in," "comes across," i.e., is grasped and moreover accepted.

Rhetoric works both ad rem and ad hominem.

"Ad rem" i.e. going into the matter itself independently of anything else. "Ad hominem" i.e. taking the fellow human being as he/she actually is in his/her susceptibility to the message. This implies that one takes him/her at e.g. his/her prejudices, which (in appearance or in reality) appear obvious to the fellow man (he/she takes them as axioms that no longer need proof). If one wants to: take the fellow human being by his weaknesses.

The task of persuasion.

This is twofold and similar to that of pure, logically pure reasoning.

1.-- *To describe what shows itself.*

This is the phenomenal or phenomenological basis.

Describing what is immediately given or known can take the form of an ordinary description but can also take the form of a story, short or elaborate, or a report or a treatise. As long as one represents what is immediately apparent. Without reasoning.

Reasoning free evidence.
Bibl. sample: *Roll. Barthes, l'aventure sémiologique*, (the semiological adventure,), Paris, 1985, 85/165 (*l'ancienne rhétorique*), ((the old rhetoric).

Ancient Greeks called directly known arguments "pisteis a.technai", proofs without reasoning techniques.

10.

The immediately obvious or known, to the recipient(s) of the message, decays into two domains.

a. -- *What one can show immediately.*

This is ad rem.-- Your audience knows e.g. the legislation on the subject. In its presence, someone gives testimony.

Think of the court: an eyewitness describes what he has seen himself or even knows from hearsay. Or think of a religion teacher who wants the children to go to church: when visiting a church, the pupils see a mass of believers attending mass.

b.-- *That of which one is immediately convinced.*

That's ad hominem.--

For example, the fact that the parents of some children go to Mass and have convinced their children of it. Such children already have a pre-judgment: they are, e.g., convinced of the life value of the Mass.

Or: a garage owner knows that his client(s) is very satisfied with the previous car, a Chrysler, and says, "Well, sir, this new car is in just the same vein, except for some interesting innovation and except. It responds to a pre.judgement.

2.-- *To demonstrate what does not show itself by reasoning.*

Here there is no longer any question of phenomenology. There is logic: reasoning! Admittedly, on the basis of what shows itself.

One thinks of a lawyer at the court who - legal texts in hand - in a strict reasoning exposition demonstrates that his client(s) was falsely accused and therefore deserves acquittal, because the witnesses in their "story" (representation of their/their version of the facts) show gaps that should prove or at least insinuate the very guilt of his client) e.g.

Reasoning evidence.

The ancient rhetors (rhetoric teachers) called these arguments "pisteis.en.technai", in Latin: probationes, i.e. proofs that rely on reasoning and demonstrate the indirectly known.

Note.-- 'Technè', Lat.: ars, is skill. A.technos is model and en.technos is counter-model (affirmation and negation are opposite each other as model and counter-model). 'Pistis': enk. (plural: pisteis) is faith, confidence, and in a metonymic sense "that which inspires faith or confidence", i.e. argument.

11.
Phenomenological method.

The first thing a person who proceeds logically does is to perceive the given as accurately as possible. Without that observation, which grasps the phenomenon, the GG, as accurately as possible, something like phenomenology is unthinkable, for it is "phenomeno.logy," the bringing up of phenomenon.

Aristotle on the signs.

The Stagirite - Aristotle of Stageira (-384/-322) - saw two types of reference from something to something else (= signs).

1.-- The unambiguous sign.
'Tekmèrion'.

Given.-- A woman shows all the "signs" of pregnancy. What is immediately observed? The increased size of the abdomen.--

Asked.-- To what does this refer? The indirect fact (which is not actually given) is that fertilization took place.-- Logical: "If pregnant, then (evidence of) fertilization". Underlying reasoning: "If consequence (pregnancy), then cause (fertilization)".

Phenomenological.

Someone who upon seeing the consequence, the immediately given and thus phenomenological object, decides: "Again to such a slut!" transgresses the immediately given and even the causal connection between the visible consequence and the invisible cause. Such a person lapses into an unsubstantiated interpretation but does not reflect what is immediately given.

2.-- The ambiguous sign.

Sèmeion.-- GG.-- The same woman. From the directly observed or phenomenon or given, one can conclude either natural conception or artificial conception. -- Pregnancy refers to more than one cause,-- to a plural concerning conception.

Phenomenological.

What one perceives directly in the case of pregnancy is "narrow" (not much). Aristotle's analysis shows that - at least today - one can decide on conception (indirect knowledge) but that concerning the true cause - misconduct ("Another slut?"), artificial or natural conception - without further testing the cause, i.e. that to which the phenomenon refers as a sign, is undecidable and thus the judgment concerning the cause must be partially suspended ("epoche"). That's phenomenology!

12.

Phenomenological 'reduction' (limitation).

We have just seen that, as regards the (semantic) reference to signs, the directly perceptible, i.e. the one to which phenomenology pays attention, -- pays exclusive attention, can be very 'narrow'. Let us now go into this in more detail.

Note.-- Among the phenomenologies (the Hegelian, the Teilhardian, and the Husserlian), the phenomenology of Edm. Husserl, (1859/1938) is the most useful in logic. For Husserl, following in the footsteps of B. Bolzano (1781/1848) and of his teacher, *Franz Brentano* (1838/1917; *Psychologie vom empirischen Standpunkt* (Psychology from the empirical point of view), (1874)), founder of the Austrian school, founded a peculiar form of merely representing or describing the directly observed (the given).

The phenomenological redirection.

The first main rule is: the Pure phenomenon and only the pure phenomenon but still the whole pure phenomenon! To the extent that only the pure given is the object of attentive observation, phenomenology reduces (reduces) the pure given to itself. In other words: everything that does not immediately show itself is 'eingelklammert' (put in brackets) as irrelevant. If not, one falls as a phenomenologist/phenomenologist into "ignoratio elenchi": disregard of what it is about. "Bene currunt sed extra viam" said S. Augustine of Tagaste (354/430), greatest church father of the West): "They walk well but off the track".

A definition of phenomenology.

Phenomenology is to describe, i.e. to render the given, the immediately known, the immediately observed - only that but entirely that - for in phenomenology the sought (Asked), the given (Given), is to be rendered as far as is right.

"2 + 2 = ?"

The teacher puts these signs on the board. -- It is a mathematical problem (Given and Asked) that requires a solution.-- How often does it happen that children do not perceive correctly and, e.g., . fill in with '5' as if it said "2 + 3 = ..." was written? Paying attention to what is given is the very first thing to solve that deduction ("If 2 + 2, then 4").

Note.-- When the weatherman says: "It will probably rain", how many people do not understand that "it will rain" with the omission of the modality "probably"? Often even adults testify that they are still in their infancy as far as perception is concerned!

13.

Meaning: sense of purpose / sense of purpose.

Admittedly, phenomenology and logic pay attention to the objective GG and GV (statement). Yet, at least in their natural forms, it is not forgotten that a given is perceived by a subject, a "somebody.

Hermeneutics.

1. *According to Ch.S.S. Peirce (1839/1914)*

man (and indeed all that is) is an interpreter, an interpreting being. Whereby he notes that some are obstinate, others orthodox (accepting authority) still others preferential, interpreting reality. Not paying attention to the given, the whole given, only the whole given.

2. *For Fr.D. Schleiermacher (1768/1834)*

'hermeneutics' meant text interpretation (Bible texts, legal texts). He extends interpretation to all of life: to live is to interpret. Which *W. Dilthey* (1833/1911) extended to what he called 'Geisteswissenschaften' (1883: *Einleitung in die Geisteswissenschaften*) (Introduction to the Humanities)), (now called 'human sciences').

Meaningfulness.

According to *J. Kruithof, The meaning-giver (An introduction to the study of man as a signifying, appreciating and agitating being),* Antwerp, 1968, man bestows "meaning" on things cognitively (signifying), axiologically (appreciating) and praxeologically (agitating): as far as the latter is concerned, a person can, without saying a word, signify a fellow human being by his agitating.

1. *Sentence grasping.*

This is the identity of grasping the given. Or, as Parmenides said, to know the being according to itself (and not according to us).

Note.-- Reread previous section on the reduction of the Given to itself.

2. *Sentence interpreting.*

This is reacting in response to the grasped identity of the given. But this reaction differs from grasping the given identity in itself.

Appl. model.

A manager sees his business deteriorating. However, for various reasons (mostly individual or social), located outside the data, namely the decline, he does not want to see it and thus reacts to the data beside the data!

It is called 'ostrich policy' (consciously suppressing reality, resp. unconsciously repressing it). Platon called it 'para.frosunè', thinking next to reality (GG), -- to the worse degree 'delusion(thinking)!

14.

Mind (interpretation): healthy, neurotic, psychotic.

Perception is the first thing if one is to proceed logically.-- Sometimes that perception is disturbed but then so imperceptibly that we pause to consider such works as *A. Ellis/E. Sagarin, Nymphomania (A Study of the Hypersexual Woman),* Amsterdam, 1965, and *Kay Redfield Jamison, De l'exaltation à la dépression (Confession d'une psychiatre maniaco-dépressive),* (From elation to depression (Confession of a manic-depressive psychiatrist), Paris, 1997 (// An Unquiet Mind (1995)).

1.-- *Common sense.*

According to the ABC theory of Ellis/ Sagarin, one reacts (indicates) as follows: A: one suffers a disappointment; B: one reacts pensive and mature; C: "I can handle it calmly though not without much difficulty". In other words: A (stimulus), B (subject), C (interpretation).

2.1.-- *The neurotic mind.*

A: I'm running into a frustration; B: I can't handle disappointment; C: "I just can't process it that bad."

Note.-- Where common sense says "it's not that bad now," there the neurotic personality overreacts, beside the fact.

Note.-- When a logician/logician compares purely objectively both reactions - "again, it's not that bad" and "it's that bad" - , he encounters a paradox, indeed a contradiction that remains incomprehensible as long as one does not check the perceiving (phenomenological) and the logical (reasoning) subject along with it.

2.2.-- *The psychotic mind.*

With schizophrenia, manic-depressive psychosis is one of the main cases of insanity. Kay Jamison describes her own case, o.c., 73, as follows.

a. *"Himmelhoch jauchzend" (manic phase).*

It's fantastic: thoughts and feelings are fast like shooting stars. One goes into them, one lets them go. For one already disposes of better ones that are still brilliant. (...). Sensuality is omnipresent: desire to seduce and to be seduced.(...).

b. *"Zum Tode betrübt" (melancholic phase).*

Suddenly everything turns around. The delusions are too numerous and go too fast. One becomes oppressively confused of mind.(...). Everything goes against. One becomes grumpy, malicious -- fearful,-- insufferable,-- utterly lost in the gloomiest dens of the mind (...).

Note. - In the manic phase one is overconfident in one's debts, and in the depressive phase one barely gets out of bed. Perception and thinking aim at the given!

15.
Phenomenology and logic: transition from cognition to metacognition.

Define "cognition" beyond any ideology, as knowledge or information processing. It is clear that phenomenon representation and reasoning, once consciously studied, take us into a new realm of understanding.

To this end we dwell on what *Ch. Lahr, Cours de philosophie*, I (*Logique*), Paris, 1933-27, 494s., says about intentionality.

1. -- The scholasticism (medieval philosophy: 800/1450).

The scholastics called attention, attentiveness, 'intentio' -- to be translated by intentionality.

Appl. model.

1. Object.-- A girl.

2.1. First intentionality or focus of consciousness: "I pay attention to a girl" (it attracts my attention). As a result, I get to know it: cognition**.**

2.2. Second attention or intentionality: "I pay attention to the girl. By doing so, I get to know my knowing: metacognition

Behold what in Latin was called "intentio prima" and "intentio secunda."

2.-- The Austrian School.

Franz Brentano (1838/1917) updated the mid-century couple and situated it at the center of his psychology (*Psychologie vom empirischen Standpunkt* ((Psychology from the empirical point of view), (1874). Thus intentionality entered (Husserlian) phenomenology.

Indeed: typical psychic life stands or falls with paying attention to as the essence of consciousness. Thus one can characterize thinking knowledge as paying attention to data. Thus one can call the intentions of our mind and will in a second degree "intentionality". After all, we are aware of reality in and around us by paying attention to what is in and around us.

More than that: by paying attention to our knowing and thinking operations - which is what phenomenology and logic do - we become aware of our conscious life. We pay attention to reality and thus give attention to our attention.

The verdict.

According to Aristotle, to judge is to "assert something from something." To assert of a subject (original) a saying (model). Aristotle's definition, however, does not mention that it is always someone who pronounces from something!

Judgment, then, is the fact that **a.** of something **b.** someone, a consciously paying attention, **c.** claims something

We saw in previous chapter that the soul of that person portrays itself in (the articulation of) the judgment that is misunderstood without the judgmental.

16.
Semantic stages: object.-- language. Meta-language.
Semantics, part of semiotics, note signs as far as referring to something else.
Bibl. sample: M. Bochenski, Philosophical methods in modern science, Utr./ Antw., 1961, 72v. (Semantic stages) .

1.-- *Presemantic*.
Object. "That girl there present" is not yet language about that girl present but this text cannot mention the object unless in a linguistic way. That's the semantic zero stage because there is no language yet about the girl present. The girl is just present. Without anyone paying attention or talking about it.

2.1.-- *First semantic stage.*
Object language.-- The fact is now expressed in a language (sign system). For example, a person who has just noticed the girl says, "that girl is over there".

Note.-- One sees that only intentionality, mentioned above, creates language. What one does not pay attention to, one does not speak about!

2.2.-- *Second semantic stage.*
Meta-language.-- This is known in traditional speech as direct and lateral speech. i.e. articulation of articulation. It is citation.
a.-- Direct reason ('reason' =quotation) : "Thou sayest, 'that girl is there'.
b.-- Lateral speech: "Thou sayest that that girl is there".

Metatals.
Those are languages over languages.
(1).-- *theories.*
The theory of logical speaking, for example, is a meta-language because it speaks of (logical) speaking.

(2).-- *Confessions of Lying.*
This is twofold.
a.-- *Mental or inner restriction (reservation).*
Someone says, "Anneke is coming" while inwardly knowing it to be untrue. The confession that amounts to a caveat that one does not express is an inner language about language ("I know I am lying" is "I say of myself that what I say is false").

b.-- *Express Confession.*
"Anneke is coming.-- What I am saying now is untrue.

Note.-- As long as the first saying ("Anneke is coming") has not been tested against the actual truth in the linguistic utterance.-- It is called "semantic nonsense" more often than not.

17.
The Identity Act.
The term "identity" ("singularity") means "reality insofar as it coincides with itself overall" (total identity). Platon calls this "the idea"! One also says "the essence". The term 'identitive' means "that which is related to identity - in all its forms (total and partial identity)".

The axiom par excellence of phenomenology.
We saw that all those who want to grasp something that shows itself must want to see that something as coinciding with itself (reduced to itself: phenomenological reduction), to perceive it. One must want to see it according to himself.

The identity axiom.
"All that is, is."-- Applied as a premise (axiom) it reads "all that is, is so." In this latter case, the emphasis is not so much on being as being this or that. Thus e.g., "This morning is sunny". The term 'is' in this sense is application of "All that is, is" in the form "All that is so (sunny morning) is so (sunny morning)".

Two variants.
The same axiom or law may vary.

1.-- Contradiction principle.
'Contradiction' or 'inconsistency' means "mutual exclusion." -- "Something cannot be (so) and not be (so) at the same time".

Note.-- Here it is very clear that the identity of which the axiom speaks is the total identity. For of the partial identity (analogy) the law does not apply.

2.-- Excluded-third law.
"Something is only itself" (is totally identical with itself) involves - in addition to the inconsistency principle - the exclusion of a third possibility: "Something is either (so) or not (so). A third possibility is not there, indeed, is impossible".

Note.-- In logistics (mathematical logic) and mathematics it is called "A is A". This is not a vain tautology (repeating the same thing), because the first A is subject (original, i.e. what asks for information) and the second A is predicate (model, i.e. what provides information about the subject).

Distinctiveness.
Because all that is (so) has a total identity with itself, all that is (so) is distinct ("discriminable") from the rest of being (so). This dichotomy (complementation) is expressed in the identity principle.

18.
The necessary and (preferably) sufficient reason (ground condition).
After phenomenology, logic proper! This ties in with the incompletely known identity of the given.

As an aside, there are so many data whose total identity escapes us,--which we know only partially. This gap is filled by logic.

The conditional sentence.
Appl. model. -- Jantje enters the classroom the Monday morning confused. The teacher sees it: He is not as he should be. That's the phenomenon (Given).

Spontaneously, she reasons, "What is the reason (here in the form of the cause)?" That is the logically sought (Asked).

If VZ, then Conclusion.
In the prephrase, the - here suspected or at least merely assumed, hypothetical - reason (explanation) is expressed. In the postphrase (conclusion) the established phenomenon (GG) is expressed as a logical consequence of the preface.

Diagram.-- If prephrase,, then postphrase (interject: explained, understood, justified)".

Applied.
Prephrase -- If Johnny, last night, stayed up too late with his parents at a café,
Postphrase.--then his being "different from usual" is understandable (logically explainable).

One sees it: in the Postphrase, the identity (full way of being) of Johnny comes up but under one point of view, namely, "He is not like other." That part of his identity or reality (idea) gets the full emphasis in the after sentence. The preface emphasizes the reason for the intended part of his identity.

Conclusion.-- The full sentence, in both partial sentences, is talking, in this concrete case, about the partial identity of Johnny: first in the guise of reason; then in the guise of the partial identity itself.

In other words: the total identity of Johnny does not come up unless "in depth" as a background of a part of it, namely his being different from usual.

Note.-- This identitive analysis appears at first sight to be sought after. Yet it will be further shown that the indentitive character of phenomenon and reason of phenomenon (Given and Asked) is decisive in classical logic.

The reasoning, conditional sense is central to all logic as logic. Just as identity (full or partial) is central to phenomenology.

19.

The rewriting method and its metacognitive scope.

The basic form of proceeding logically reads "If Prephrase, then Postphrase." It can be revealing when one rewrites given wording in that basic form.

Appl. model.

"A good shepherd herds his sheep." The emphasis is on "good" because in that adjective is hidden the reason, the condition.-- The rewrite, in two turns, shows it: **a**. "A shepherd who is good herds his sheep"; **b**. "A shepherd, if he is good, herds his sheep.

1.-- *Mathematical model.* Take the familiar "$2 + 2 = 4$". -- Only the logical rewriting shows the if-then structure and has metacognitive scope.-- "If 2 and another 2, then 4". Note that a general (universal) preposition is omitted (which is called the unsaid), i.e. "Separate sums S1, S2 ... Sn are summed up in a single total sum Ss".

As an aside, this is what is called "summative induction." This universal rule governs the application because S1 is, in this case 2 and S2 is also 2.

Conclusion. If general rule and an application of the general rule, then a justified - logically valid - decision.

As an aside, that's a syllogism (capstone).

2.-- Daytime model.

"If it rains, then by walking in it I get wet.

Actually, that full sentence includes two conditional phrases that come exposed thanks to rewriting: "if it rains and if I walk in that rain, I get wet".

Such more logically rigorous rewrites show the difference between everyday language-which is thoroughly logical but unexpressed-and logically clarified language.

The full logical rewrite.

Again, there is an unsaid.

Namely "For all cases, if it rains if one walks in the rain, one gets wet". This is the formulation of a physical law, i.e., a structure that knows no exceptions and immediately summarizes all possible applications.

Consequence: when I say "If it rains and I walk in that rain, I will get wet," I am applying that law to precisely one case, mine.

Logically complete, then, is the concluding sentence (syllogism) which expresses both the rule and its application in the preface. So that - as will be discussed further - a complete reasoning contains three sentences (two prepositions and one postpositions).

20.
Hegelian notion of "real".

Hegel (1770/1831) is known for his statement, "All that is 'Wirklich' (= real) is reasonable and all that is reasonable is real." The terms 'real' and 'reasonable' are synonymous and mean "that which has a sufficient reason or ground" (and thus is reasonably justifiable).

For example, a teacher who is too old and worn out is no longer "real" because she can no longer handle her tasks (Given + Asked). She does not offer a solution. She no longer solves the problems.

Hegel's phenomenology and logic.
Bibl. sample: H. Ett, ed., E. v.d. Bergh v. Eysengha, Hegel, s.d., The Hague, 87vv .

Hegel was reproached on the classical-rationalist side for "deducing" all that was, is, will be, i.e. all that is factually given, from abstract-aprior presuppositions. One Krug challenged him to 'deduce' in this way the existence of any dog or cat or his penholder. -- In 1802 Hegel replied.

a.-- *Phenomenology.*
Hegel: "The existence of something is not proved from abstract principles! Actual existence is always a given". In other words, Hegel relies on direct knowledge (inductive knowledge).

b.-- *Logic.*
Hegel: "Actual existence is non-existent (*note* -- is unreal, i.e. without sufficient reason) -- without the system (= coherent whole) which comprises the totality of all that was, is, and will be."

Note.-- Here we sense that Hegel was thinking under the influence of Romanticism (1790+).
1. For the romantics, all that is was in fact a story: it is all that was (past), is (present), will be (future).
2. For the romantics, e.g., a penholder or dogs and cats are only "moments" (changeable elements within the totality of movable being.-- That is romantic mobilism.

Deduction.
Hegel: "To point out and understand from the understanding of the living whole the meaning and place - understand: reality, reasonableness - of dogs and cats as well as of a penholder" is "deduction", i.e. to account for it in a logical way by uncovering its sufficient reasons within the system of all that was, is, and ever will be.

Thus, one sees that Hegel - in radical Romantic line - proceeds logically and immediately proves that Romanticism and logic can go together.

21.
The comprehensibility law.
Here we are concerned with logical intelligibility or "intelligibility" (rationalists say "rationality"). The classic name: the principle of (necessary and preferably sufficient) reason or ground. For the law acts as an ever-present axiom in all that we do and fail to do logically.

Formula.
"All that is, has - either in itself or outside itself reason or ground". Thus the given becomes comprehensible, sensible, intelligible. Hence: law of comprehension. This is the artery of logic which has mainly two uses of it.

1.-- Deduction (necessary derivation).
"If A (prephrase), then B (postphrase).-- Well, A. So B".
Appl. model.
If all water boils at 1000 C., then this water here and now. Well, all water boils at 100°C (*note:* a natural law). So this water here and now boils at 100° C..

Note.-- Since this is a law that tolerates no exceptions, the boiling of this water here and now is predictable because inferable as necessary.-- here the preposition is given.

2. Reduction (non-necessary distraction).
Here: the preposition sought.- "If A (preposition), then B (postposition).- Well, B. So A".
Appl. model.
If all water boils at 100° C., then this water here and now.
Well, this water boils at 100° C. (*note:* as a sample). So all water boils at 100° C ...

Note.-- This is one type of reduction, viz. the generalization: from just one sample - the boiling at 100° C. of this water here and now - one 'extrapolates' (generalizes) to all water concerning boiling.

The principle.
Look carefully at the formulas: in both cases, the principle of (sufficient) reason takes precedence: "if A, then B", i.e. "if reason, then the (predictable or hypothetical-seeking) phenomenon understandable thanks to that reason".

The great tradition.
Anaximandros of Miletos (-640/-547) introduced the term archè, reason, into philosophy. Platon of Athens said, "Nothing is without reason" (Everything is intelligible).

Note.-- The paleopythagorean and Platonic concept of 'theoria', Lat.: speculatio, fathoming (justification) includes
a. observation, as clearly as possible, of a given (phenomenon) and especially
b. detection of the necessary and preferably sufficient reason for the fact.

22.
The foundations of phenomenology and logic.
We saw it above: phenomenology relies mainly on the identity law and logic on the intelligibility law.

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

Note: the concept of being(de) must be understood not in the day-to-day sense ("existing outside the (human) mind) but in the absolute, ontological sense as the opposite of absolute nothing (something as non-nothing).

2. *How does one prove both laws?*
This is the recurring objection from the eristicians (from early antiquity) to the deconstructionists of today.

a.-- *H.-J. Hampel, Variabilität und Disziplinierung des Denkens*, (Variability and discipline of thought,), Munich/ Basel, 1967, 17ff.; says that most thinkers agree that both laws govern classical Aristotelian logic.

He lingers for a moment on its justification. He concludes that some sort of intuition - he mentions writers on the subject - "founds" the laws.

b.-- *E. Oger, Literature review (Rationality: its foundation and its samples)*, in: *Tijdschr.v. Philosophie* 54 (1992): 1 (March), 87/106, considers at length the foundation of the principle of reason. Men like K. Popper, J. Habermas, J. Derrida and others disagree about the provability of the principle.

The crisis of rationalism.
By giving up the antique-medieval theoria, Lat.: speculatio, entering into reality, are left as sources of knowledge for (modern) rationalism:

a. *The sensory experience,*
which cannot yield the general principle anywhere (senses are non-general);

b. *The abstract reasoning,*
which in order to prove both principles would have to derive them from given prepositions. Well, what tragic irony is: both laws belong to those prepositions! Circulus vitiosus (circular reasoning)! In order to prove both, one must presuppose both as already proven.

23.

Part II

Henology (unitary theory).

"Them" in ancient Greek is "one," "the one. -- 'Unity', even today, means both elemental unity ("2 is made up of two units") and encompassing unity ("A multitude is brought to unity").

Order.

Platon, Filebos 18b/d, explains, by example, what 'stoicheiosis': Lat.: elementatio, arrangement according to elements in their connection, is. 'Stoicheion', Lat.: elementum, is 'element'.

1.-- Collection

"When someone (...) paid attention to the fact that sound was infinitely diverse (*op.:* many), 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 certain sound value (semivowels). Furthermore, he distinguished a third type of letters which we now call consonants".

Note.-- The letters of the alphabet represent sound (values). That is their common characteristic. That universal concept is divided into vowels, semi-vowels, consonants which are merely private concepts. The common property is that by which things are similar and therefore no matter how many (dissimilar) they are, under that point of view they are one.

2.- System (system).

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

Note.-- The same letters, as sounds, show another common characteristic, viz. however distinguishable among themselves, they are as members, parts, of one system never separable from each other. That is their second unity. This is not based on similarity but on coherence.

Conclusion.

Platon: "Therefore he assigned to them one science which he called 'grammatikè', speech (alphabetology)."

One sees it: stoicheiosis, arrangement of a multitude of data, relies on similarity (which leads to collection; Platon says: all) and on coherence (which leads to system; Platon says: whole).

The middle ages spoke of totum logicum (collection) and totum physicum (system). What concerns notions led to distributive (collecting) and to collective (disrupting) notions. One sees it: two types of common property (similarity and coherence) make multiplicity one.

24.

Harmology (order(s) doctrine).

'Harmologein', ancient Greek, Lat.: ordinare, to order, i.e. to assemble. - Harmology is order(ing) doctrine.

"The whole metaphysics of the West, from Platon to Nietzsche, can be considered from the concept of 'order/order' such that each of the Western systems would appear as a type of order thinking." (*F. Schmidt, Ordnungslehre*, (Order theory), Munich / Basel, 1956,11).

Indeed: *E. Beth, De wijsbegeerte der wiskunde*, (The Philosophy of Mathematics), Antw./ Nijmeg., 1944, 102vv, cites the mathesis universalis, the comprehensive order(s) theory, -- on a mathematising basis, of R. Descartes and o.c., 141, he says that German idealism (Fichte, Schelling, Hegel) refounded this on a non-mathematical basis (Hegel advocated a deduction of that type, as mentioned above).

S. Augustine of Tagaste (354/430)

is the first who wrote a separate theory of order: *the ordine* (About the order).-- structure.-- A multiplicity of data - music, geometry, astronomy, numerology (the subjects since the paleopythagoreans) - are seen by the great Church Father from the antique Greek arithmos, Lat.: structura, structure, i.e. all that by resemblance or coherence creates order in a multiplicity. Finally, arithmos is common property, distributive (collection) or collective (system).

Combinatorics.

Augustine defines ordering: "Ordering is the situating (arranging, placing) of equal and unequal things that assigns to each its due place."

In it he imitates Cicero (the great orator and politician (-106/-43)).- In 1666 *G. Leibniz* (1646/1716) publishes *De arte combinatoria* (On combinatorics).

Configuration.

A set of places is called a "configuration. To combine is to assign something a place in a configuration. For example, a housewife assigns places to her linen in a closet. Noë placed all living things in the ark, a configuration. - " To combine is to place data within a set of places" (*C. Berge, Principes de combinatoire*, (Principles of combinatorics,), Paris, 1968). Which is still Augustine's pythagorean definition!

Now we better understand Hegel's deduction: to situate (place) a moment (movable element) within the living whole of all that was, is now, and will be, as the all-encompassing configuration, and thus to assign meaning.

25.

Applied harmology.

Let us now turn to examples of greater scope.

1.-- *Systechy and differential.*
a. *A systechia ('su.stoichia')*

is an opposition pair. i.e. a configuration consisting of two places in which two 'values' (fillings) are situated with opposite sign.-- For example, "ice cold/ hot" In other words: model and counter-model.

b. *A differential (difference set)*

is a set of places such that within the extremes (extremes) of a system intermediate values are situable,-- intermediate models.-- Thus: 'ice cold / cold / lukewarm / warm / hot'. One sees here that there are gradual quantitative changes with qualitative jumps.

2.-- *Mathematical configurations.*

Some examples. Besides the fact that spatial figures are necessarily, obviously, configurations, number mathematics also exhibits appropriate configurations.

2.1.-- *Calculation configuration.*

$$\begin{array}{r} 27 \\ \times 35 \\ \hline 135 \\ 81 \\ \hline 945 \end{array}$$

I.M. Bochenski, Philosophical methods in modern science, Utr./Antw., 1961, 52vv. (Calculus), gives what follows.

The units, tens, hundreds, etc. are each given a place on the paper that involves an unmarked configuration.

Another example. -- $ax^2 + bx + c = 0$. We call this a "flat" configuration! The operations locate the number values in the configuration: $ax^2 + bx + c - c = 0 - c$ gives $ax^2 + bx = -c$. Thus we calculate in an orderly fashion, i.e. combinatorically, assigning places in a configuration.

2.2.-- *The rule of three.*
Again, the configuration is known.
100% is equal to 30.   **1% equals** 30/100 (3/10).
15% equals 15. 3/10 = 4.5.

Here you can see the structure of the collection: 100% = universal collection; 1% is instance (= element); 15% is private collection.

Note -- In orderly working one recognizes the categories (= basic concepts) of collection (in virtue of Similarity) and system (in virtue of Coherence). What is stated above is inconceivable without that. Well, *A. Guzzo, Le concept philosophique du monde*, (The philosophical concept of the world,), in: *Dialectica* 57/58 (vol. 15), 15.03/15.06.1961, 97ss., shows that Platon defines the concept of world by means of 'all' (collection) and 'whole' (system): world, -- all and whole make up the same idea. To order is to describe a world.

26.

The so-called logic of relations.

B. Russell (1872/1970), as a logical atomist, i.e. as a thinker who wanted to put the last, irreducible "elements" of reality and of language at the center, noted that, from the point of view of logic of relations, there were two main currents:

a. the atomists emphasize the loose elements (and their combinatorics);

b. those who emphasize totality - in which he certainly meant Hegel - and situate the elements in the configuration of totality.

Fundamentally, it's more about accents than stretches but Russell's comment shows that there is a fundamental problem.

Logic of relations.

This name is recent. It is mainly used in the midst of logistics, where people dare to claim that traditional - 'classical' - logic is totally unsuitable for the precise formulation of relations.

None other than *G. Jacoby, Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, (Logisticians' claims on logic and its historiography), Stuttgart, 1962, 53/55 (Relationslogik), has denounced this error loud and clear: it rests on a radical misconception concerning traditional logic.

Thus, one dares to claim: "The judgments of mathematics do not fit into the scheme of the judgment of traditional logic "subject/verb/proverb" because mathematical judgments express relations. Judgments that attribute a proverb to a subject are appropriate to properties (classes); relations that constitute the relationship of two or more constituents cannot be accurately expressed in this way." (O.c.,53).

To this Jacoby replies: whoever makes such a claim says something about the logic of classes (properties) but may forget his statement for traditional logic. Identities - partial identities as we shall see, or analogies - are central to traditional logic.

Well, it perfectly expresses partial identities regarding relations.

In logistics, symbols, as mathematically possible, are central and not concepts. These symbols are generated in logical calculi (mathematical operations). For properties and for relations, different symbols with corresponding operations are introduced that make no sense in traditional logic, because this has its own logically strict language.

27.
The logical essence of arithmetic.

O. Willmann, Geschichte des Idealismus, III (Der Idealismus der Neuzeit), (History of Idealism, III (Idealism in the Modern Era)), Braunschweig, 1907-2, 48ff., talks about the revolution that *Fr. Viète* (Lat.:Vieta (1540/1603) introduced into modern mathematics. This Platonist calculated, instead of with numbers ("logistica numerosa", e.g. 4 + 3 = 7) as the middle ages before him, with letters ("logistica speciosa").--'

In his *In artem analyticam isagoge* (*Introduction to Analysis*), he worked with ideas, i.e., the being of things, the translation of which the Latin provided 'species' (hence 'speciosa' or ideative arithmetic).

The letters, to begin with, could thus represent all possible figures, for in Viète's view an idea was a universal concept that summarized all possible singular and private cases. The following diagram illustrates the enormous progress in arithmetic.

Ordinary language	*Cipher Language*	*Letter Language*
	4 + 3	a + b = c
The sum of two numbers, resp. ideas not operative though universal	Figures as models though operative, not universal	Letters as models and operative and universal

Note -- One can safely replace the + sign with e.g. > (greater than) or < (less than).

Explanation.

I.M. Bochenski, Philosophical Methods, 55v. (*Eidetic and operative sense*), explains.

1. A sign has 'eidetic' or semantic sense (meaning) if one knows from it that to which it refers.

2. A sign only has an operative (syntactic) meaning when the semantic reference is enclosed in brackets (one does not pay attention to it) and one is limited to knowing how to deal with it logically, i.e. when one incorporates it into a logical calculation or calculus. This is done by applying the arithmetical or syntactical rules that apply to it. "We do not know what the sign means (*note:* semantically) - but we do know how to operate with it" (o.c., 55) .

Note.-- The whole difference between traditional - eidetic or semantic (the reference thinking along) - logic and logistic - operative or syntactic (the reference of the sign not thinking along) - logic is clarified in the above diagram. Logistic logic is the thematized traditional logic.

28.
The partial identity.

We saw it: ontology aims at identity, i.e., being.-- In the identity principle, it was about the total identity of something with itself,--of being or reality with itself.

The harmological ontology, however, extends identity because in order to order a multiplicity, more is necessary than total identity of something with itself: the partial identity of that same something with something else is the basis. This partial identity is twofold: similarity (collection) and coherence (system).

1.-- *Total identity.*

It can also be called the reflexive or loop identity. In Dutch: eenzelvige, i.e. something reduced to itself identity or reality - idea in Platonic language -.

2.-- *The partial identities.*

On the contrary, there is one total identity which, by the way, is articulated in the definition. But there are a multitude of partial identities or connections, relations. Immediately it becomes clear that classical logic is a logic of relations but identitatively. Not through arithmetic thinking with symbols and calculus. Traditional logic looks at the basis of what we call relations.

2.1.-- *Similarity.*

Part of all relations is summed up in the term likeness.

Appl. model.

"This is an apple." By speaking in this way I pay attention to 'this' (total identity) but also to the similarity with other 'things' which are called 'apple(s)' in the language. I thus situate 'this' being in the collection of apples. In this sense 'this' being is part-identical (analogous) to all other apples. That partial identity is usually called "common - common - property" which is 'common' precisely because of the partial identity.

2.2.-- *Consistency.*

The other part of relations is summarized in the term coherence.

Appl. model.

"This apple is healthy. By this I mean not only that it is healthy in itself but also that, if I eat it, it strengthens my health. Therefore, it does not resemble health but is related to it - causally or causally. Therefore, there is a common characteristic that connects the apple and my health,-- making them one. This is the second type of analogy or partial identity.

29.
Identical model theory.
"The analogy is the pivot of the model concept" (*K. Bertels / D. Nauta, Introduction to the model concept,* Bussum, 1969, 31).

Better would be: "And the total and the partial identity (analogy) are the pivot of the model concept". We explain.

1.-- *Total identity.*
The 'tautology' "a is a" is one application of the couple original/model. In it there is no analogy, but total identity of a with itself. The first a is the original, i.e. what asks for information (the unknown). The second a is the model, i.e. what provides information. Since this is the total identity of a, a is answered.

Note.-- The definition is governed by precisely the same relationship, because in the definition original and model coincide.

2.1.-- *Similarity-expressing (metaphorical) analogy.*
The schedule:

Rooster Jantje	This is "proportional analogy." The sentence reads, "Johnny is the cockney of the children". In comparative language, "like the cockerel precedes the chickens, so too is Johnny the Cockerel for of the children".
Chickenschildren	

The comparison, once shortened, becomes a metaphor: "Johnny is the rooster for of the children." -- In his social role (partial identity), Johnny is the original. From that role (that aspect of his whole being) the model is the rooster. common characteristic : to preside, to lead. Although different, the metaphor identifies both under one point of view.

2.2.-- *Cohesion-expressing (metonymic) analogy.--* The schema:

fire cause	"Attributive analogy". The sentence reads : "Where there is smoke, there is fire". Or: "Smoke is fire". Comparatively: as the cause stands to the effect, So also the fire stands to the smoke. Shortened, this becomes a metonymy : "Smoke is fire" (for: Smoke is cause of fire).
smoke consequence	

Smoke as cause is the original. Fire is the model as cause.

Common characteristic: to be caused. Although only one application, smoke as an effect is usually identified with fire as a cause. Smoke and fire are identical from one point of view: within the whole context and coherence: "smoke/fire".

Note.-- The cockerel and Johnny belong to one and the same - identical collection. The smoke and the fire belong to the same system.

30.
Basic differentials.
In passing.-- *J. Royce, The Principles of Logic*, New York, 1912-1; 1961-2, 9, says that logic is only a part -- "a very subordinate part'" - of the doctrine of order(s), "the science of order". - This is evident, among other things, from what immediately follows.

Basic Differential.
Totally identical (with self).-- Partially identical (analogous)(with something else).-- Totally non-identical (with something else). - This is the basis of identitarian ordering.

1. --The *logical square.*

Model	Counter model	This is the following configuration.
All well	All non (none)	
Non-all are (some do)	Non-all non (some not)	The structure is clearly a systechy (model / counter model) with intermediate models (differential).

In Scholasticism: typical of a totum logicum, a collection, (also denoted by 'omne' as a translation of Platon's all As concept: a distributive concept (a property spread over several instances (now called 'elements')).-- For example, the concept of 'people!

2. -- The logical square .
Now follows, another configuration.

Model	Counter model	The structure is the same and not the same. For in Scholasticism it was called a structure typical of a totum physicum (literally a natural whole), a system (also indicated by 'totum' as a translation of Platon's
Entirely yes (all portions yes)	Not at all (none) (all portions not)	
Not quite so (not all parts do)	Not at all (not all portions not)	

whole). As a concept a collective concept (a property also spread over a multiplicity, though now not of specimens but of parts of a whole)

Again: similarity or coherence.
The first logical square targets what is equal in many instances. The second logical square targets what is similar in many parts, i.e., coherence within a whole or system.

In the first case, one has a set of specimens. In the second case, one shows a system that makes many parts, parts one.

In the first case: people. In the second case: mankind or humanity as a whole. That humanity is a collective concept is evident from the fact that people (as a collection) are simultaneously coherent (e.g.: because they live in communication and interaction with each other).

31.

Identical value sense.

Bibl. sample: Th.Ribot (1839/1916), in his *La psychologie des sentiments*, (The psychology of feelings,), Paris, 1917-10, 171/182 (*Les sentiments et l'association des idées*), ((Feelings and the association of ideas), shows how our mind, as a value sense, values something including - in terms of - something else. Our appreciative capacity is also, transferential.

Association.

If, following A, B is thought of or B is co-appreciated, then B is a thought or mind association of A.

1. - *Equivalence valuation.*

For a young man, if he resembles her beloved son - has the same age and so on, then a mother feels within herself the same feeling - at least a very related (analogous) feeling - of sympathy arise, as if it were her own son.

2. - *Coherence valuation.*

A strongly in love lover - always says Ribot - passionately goes through an erotic feeling for the person of the beloved. But, if he sees or thinks of her clothes, her furniture, her house, then - due to coherence - he transfers his eros to everything that belongs to her (which is fetishistic feeling). The same feeling emerges as if it were the beloved herself.

Note.-- Think, for example, of the rituals at demonstrations: the Chechens burn the Russian flag (not because it resembles Russia, but because it is related to it).

Transfer.

In ancient Greek 'tropos', reference. Hence our 'tropology' (theory of tropes, transfers).

a. *Metaphorical sign.*

The young man, o.k. parable, is sign that refers to the mother's son and calls to the son.

b. *Metonymic sign.*

The clothes and such of the beloved, o.k. coherence, are signs that refer to and evoke the beloved. In other words, while maintaining all distinction or separation, the mind and appreciation partially identifies (partial identity).

Transfer (transfert)

Ribot speaks of "transfert par ressemblance" (similarity transfer) and of "transfert par contiguité"(coherence transfer).

All people,--especially all human scientists and psychologists know this phenomenon of "confusion" of disjointed existing things. Identitive ontology exposes the structure of it.

32.
Tropology: metaphor.

'Tropos', reference: something is known, sensed, willed in terms of something else, including something else, co-appreciating something else.

Note.-- That means that something, includes, implies something else. Or also that something else is inherent in something.

Trope.

A trope is the abbreviated typing (identifying) of
1. a being - something -
2. through another being - something else - that resembles (metaphor) or is related to it (metonymy).

Dwell on the metaphor.

"That woman is a reed." - "That's a reed of a woman".-- "What a reed!". -- In virtue of similarity, the metaphor partially (= analogy, i.e. partly equality partly inequality) identifies the woman in question with a reed. The comparison is and remains the basis, i.e., confronting the woman with the reed (because "compare" does not mean "equate")

Shortening.

Instead of speaking associatively - "That woman is reminiscent of a reed (so changeable, pliable, is she)" - one shortens. Identically one says: "That woman is a reed". The term "is" means, "is under certain point of view, part-identical, a reed. The schema reads:

$$\frac{\text{Reed}}{\text{Variable (physical)}} = \frac{\text{that woman}}{\text{volatile (psychological)}}$$

There is a common feature that represents what is identical in both data - the reed and the woman. The communicative and interactive power of the of the abbreviation lies there

in that it weakens the comparison, resp. association, which is at the origin of the transfer. This power turns it into a figure of speech, i.e. a manner of speaking that accentuates.

Collection.

The copies of a collection resemble each other in terms of the common property. Thus they are part-identical (analogous). Those women the cane belong to the same collection.

The metaphorical sign.

A map, as an image based on similarity regarding the structure of a landscape, is a metaphorical sign of that landscape. The structure in the map and the landscape - both of which differ enormously - is identical. The map is the 'shortened' - metaphorically shortened - form of the landscape indicated by it).

33.

Tropology: metonymy.

We repeat: a trope expresses a reference from something to something else. In virtue of comparison, i.e. confrontation. Abbreviated.

Do we dwell on the second major type, the metonymy. "Apples are healthy." -- "Oh! Those healthy apples!" -- In a store offering them for sale: "That's my health!".

On the basis of coherence, one partially identifies (analogy, i.e., partial identity) "apples or those apples" with "healthy or health." -- Instead of speaking associatively - "Those apples there remind me of health (because they cause health)" - I shorten and say: "That's my health". -- Again the auxiliary verb 'is' means "is partially identifiable with". -- The scheme reads:

$$\frac{\text{apples}}{\text{cause}} = \frac{\text{health}}{\text{result}}$$

In other words: there is a common characteristic that makes apples and (my) health intertwine. Both belong to one and the same system, -- a dynamic system: the process which consists in apples co-creating health.

System (system).

A system can be physical (a crystal), biological (a flower, an animal), human (a man), sociological (a factory, a cultural landscape), cosmological (the universe). The parts - portions - of a system do not resemble each other as in the case of the collection: they resemble each other in that they make up a whole, a cohesion. That is their common characteristic which is not distributive (spread over a multitude of specimens) but collective (situated within one specimen). In this the parts (subsystems) are identical.

Dynamic System.

This is the same as a process but then considered as one and the same totality which shows all the characteristics of a system. Here: the co-creation of health.

The metonymic sign.

A signpost does not resemble the landscape or the point it designates. It is related to it. The diagram reads:

$$\frac{\text{signpost}}{\text{landscape}} = \frac{\text{part}}{\text{entire}}$$

'Antwerp' with an arrow under it or in the arrow itself of the -traffic sign means, "(Whoever follows this road will (end up) in Antwerp." Shortened, as the trope does: 'Antwerp'.

Are. As an auxiliary verb, the term is identitive. This is abundantly clear in the sentences that tropes pronounce.

34.

Tropology : synecdoche.

Bibl. sample: K.A. Krüger, Deutsche Literaturkunde, (German Literature,), Danzig, 19101 115.- The antique Greek term 'sun.ek.dechomai' meant "suddenly I make myself master of". Hence the term 'sun.ek.dochè', synecdoche.

A specimen/ collection and vice versa as well as part/ whole and vice versa.

In short: the metaphorical synecdoche speaks of all the copies of a collection - abbreviated - in terms of one (or at most a few) copies and vice versa; the metonymic synecdoche speaks of the whole of a whole of a system, - abbreviated - in terms of precisely one (or at most a few) parts, portions, and vice versa.

One translates - so does Krüger, among others - 'synecdoche' by co-attribution. Indeed: this figure of speech speaks of something in terms of (including) something else (in this it is a trope). That something else belongs either to the same set or to the same system (partial identity or analogy).

Common feature again! About the original, the synecdoche speaks in terms of the model: but here original and model are copy / collection or part / whole.

1.-- *Metaphorical synecdoche.*

"One soldier stays at his post" says the commander to all the soldiers in front of him. He does say "one" (model) specimen but he means (original) "all". A teacher is late: "Teachers are never late" says the barred principal. He does say 'teachers' (plural) but he apparently means 'this one teacher' (singular).

2. -- *Metonymic synecdoche.*

"The beard is there." Thus the company staff when the (whole) boss arrives. They do say "the beard" (the part as model) but mean "the whole boss" (the whole as original).

The German poet Schiller: "We beg for a hospitable roof (dwelling)". "This parish counts two thousand souls (people)". "A thousand-headed crowd" (head as a model for the whole human being).

Note.-- According to Krüger, allegory (elaborate parable) and personification (personification) (representing inanimate things as alive) also belong to the domain of tropology. "The fresh air has awakened.

One can add the parable ("parable") to the allegory -- But with that we are in the (elaborate) metaphors.

35.
Generalization and 'Whole-ization' or Globalisation..

In these two terms, two adjectives stick out: 'general and 'general'.-- In the wake of what the synecdoche holds, we now briefly -- anticipating what will be said about "scientific induction" (in its two main forms) -- set out what generalization and 'whole-ization' are.

Note.-- The antique Greek term 'ep.agogogè: Lat.: inductio, refers to a method of working:

a. on the basis of samples either in a collection (at least one copy) or in a system (at least one portion)

b. decide on one or more traits (common properties) that can be confirmed in future samples: fill in a gap in testing from done samples (i.e. possible samples to be done).

1.-- *Generalization.*

Preposition of the metaphorical synecdoche, because this form of induction relies on similarity,

Appl. model.-- If a learning method succeeds with these students (sample), it will also succeed with the rest and thus with all students.-- From one or a few (singular, private) samples one concludes to all possible ones.

Appl. model.

The inspector interviews 4 out of 24 pupils. A differential comes out: 2 do well; 1 less; one bad. Where the qualitative jumps are "good / less (good) / bad (not good)" as the norm.-- Based on this sample, he decides on all pupils (which, of course, is a reduction, i.e., a decision with reservations).

2.— *'Whole-ization'.*

Preposition of the metonymic synecdoche, because this form of induction relies on coherence.

Appl. Model

An economist studies the economic life of Antwerp. As this theme is too massive, she limits herself to two samples: the Meir and the harbour. She will get, although with gaps (untested parts), a view on the whole (system) of Antwerp's economy. -- In the mere generalization one generalizes. In this case one globalizes: of the tested parts one concludes the testable, the rest and at once the totality.

Appl. model.

In the medical laboratory, one analyzes urine and blood of a patient(s). To develop a view of the whole patient. From the tested part to the rest and thus to the whole!

36.

Comprehension logic.

The main presuppositions (ontology,-- phenomenology, harmology) are behind them.-- On this pedestal rests the actual logic which does not put concepts, not even judgments (as logicians and cognitivists believe) at the center but does incorporate concepts and judgments insofar as in conditional sentences (reasonings).

Description.

A concept is "something (reality) insofar as it is present in our mind."

Note.-- 'Idea' (at least in the Platonic sense,-- not in the modern sense) is not an understanding! The understanding of something is that something itself insofar as it is accessible to (our) mind,-- is meaningful or intelligible. "To ontos on", the really real. Thus Platon.

Concept and term.

In language context, a term is a term. One does not confuse 'term' with 'word'. All text is a representation of concepts. Let us take the term 'girl'. The text that defines that short term is a text that reads "young woman". Those two words together make up precisely one term or concept.

Content / scope (domain).

The term "all that ... is" summarizes both sides of each concept. 'All that' indicates the scope. '...' depicts the content (the kentracks). 'Is' situates content and extent in being (reality). - Thus e.g. "all that is girl".

1 .-- Content.

What is present in something in terms of existence and essence is reflected in the conceptual content. This reality can be divided into aspects (= Lat.: notae, i.e. elements of a notion). Thus in the one concept 'girl' the system (coherence) of at least two aspects (notions) is expressed: **a.** female gender (which itself consists of two aspects: female gender); **b**. youthful. In short: "youthful woman".

2.-- Scope (domain).

This is the collection (distributive term) or system (collective term) to which the content refers. For example, the term "youthful woman" refers to all that is youthful.

"Content/Size" ratio.

The poorer the content the greater the scope. -- Thus 'woman' refers to many more beings than 'youthful woman'. Here, in brief, is the doctrine of the medieval scholastics concerning 'comprehensio': content, and 'extensio', size. Now they also say 'intensity' and 'extension' or 'connotation' and 'denotation'!

37.

Concepts as far as distributive or collective are central.

First of all: traditional logic does not work with vague notions (classes) but rather with defined notions. And these distributively or collectively situated. Which, in passing, a lot of logicians and cognitivists forget. Thus, concept logic is not at all a property logic.

Distributive or collective definition.

Let us again take the concept of 'girl'. First of all: as long as we do not translate into "young woman", we are dealing with an "informal", fluid, open to all interpretations concept. Once translated into "young woman" it becomes a defined concept. And one knows what one is thinking.

Tripartite logical view.

Those who compose a text about "girl" keep in mind - always logically - what follows.

1. The whole girl.

Who neglects e.g. the trait ('note') or characteristic 'youthful', commits a gap: he/she neglects something that characterizes all girls. In other words: he/she does not see the collective concept that encompasses all traits.

2.1. All girls.

The term "girl" refers to all that is girl. In other words: on the whole collection with as a common characteristic "youthful woman~' This time one sees the distributive character of the concept.

2.2. The whole of all girls.

Is a girl as a singleton one system, all girls anywhere in the world also hang together. They feel solidarity with all others. Close together in feminist movements. Or - negatively - are envious one of the other (which is also coherence). Or they are lesbians. This time one sees the collective, but large-scale, nature of the concept.

Ontological definition.

Porphyrios of Turos (233/305; Neoplatonic thinker) is known for his tree diagram 'girl' he would situate in the series "being, material-spiritual being (as human), female being, young-female being". Hegel (770/1831; German idealist) would situate 'girl' in the series "all that was, now is, ever will be" (in a romantic-evolutive sense).

Finally, Porfurios and Hegel each work out in his own way the partial term 'is' from the formula "all that ... is".

Do we note once and for all

Not concepts but distributive and collective concepts are central to traditional logic.

38.
Scope types.
That to which the content of a term refers lapses in the following.

1.-- The transcendental (all-encompassing) scope.
With Hegel we agree that all that is ...... is to be situated in all that is, -- in diachronic language: in all that ever was, present is, ever will be. According to him, to "deduce" something is to situate it in that totality. Which amounts to ontological definition. Indeed: as soon as something is, i.e. is something, not-nothing, it situates itself within that totality.

This makes up the background -- unconsciously mostly or consciously preferably of what follows. The concept of 'reality' - something - may seem empty, -- which is false, -- but it illuminates all that we know and deal with, like a light that precedes (one calls that aspect of ontology light metaphysics). Without the all-encompassing concept of 'reality' we would be sight-blind and directionless.

2.1- The singular (one), private (some), universal (all) scopes.
Just one girl (individual or conjugate: singular). Multiple girls (private: subset indicating). All girls (universal).-- This is the distributive view.

2.1- Partial and total scopes.
Just one portion (of a whole; singular-collective). Multiple portions (private collective). All portions (total-collective).-- That's the collective point of view.

Note -- It has been noted that in some uses of language -- especially in the wake of time-honored tradition -- a concept is first and foremost referred to as universal. The impression is given that a singular concept that refers to precisely one fact is actually "no concept".

However, this is important for e.g. geographic concepts, which are first of all singular: e.g. there is only one Antwerp in the whole universe. The same applies to historical concepts: for example, there is only one Emperor Nero! The clinician in a clinic is not dealing with the (universal) disease but with this singular sick person here and now.

As an aside: the Romantics,-- later the Badener Schule (with e.g. W. Windelband (1848/1915)) emphasized the uniqueness of things. Windelband called this "idiography." Thus, e.g., a monograph is an idiographic text.

39.
Model of classification of a concept.

The term in question is "social criticism. Prof. Martin Bronfenbenner wrote an article on the subject in Harvard Business Review (1973: Sept.-Oct.). He begins with - what logicians call - a classification or categorization. We summarize.

1.1.-- *Radical anarchism.*

For example, Abbie Hoffman's manifesto in 1968.

a. Money should be abolished: no more payment for housing, food and clothing, medical care, communication media and w.-c.

b. "Our goal is complete non-employment: a society in which everything is done by the machine and people are completely freed from the drudgery of labor." -- That is the thrust of the Yippies (Zippies) who share such axioms.

1.2.-- *More moderate anarchism.*

That's the counterculture of the Hippies.

a. Withdrawing from the established society - the establishment - into autarkic (complacent) communes in the metropolis or in the countryside! Economic existence thanks to selling cheap jewelry or thanks to agricultural cooperatives.

b. "Pushing the boundaries" i.e. experimenting with religion and occultism, with sex and drugs (the latter in the wake of the beatniks of the fifties.

1.3.-- *Syndicalism (syndical anarchism).*

a. The state must be phased out (a theme shared by all anarchisms).

b. "all power to the workers" (we think of amada). Power must be conquered - not by political revolution but - by strikes. The factories get labor government.

2.1.-- *Neo-Stalinist Socialism.*

Advocated in Japan, among other places. The Chinese cultural revolution (Maoism) also holds analogous axioms. Marx and Lenin are the figureheads.

a. Freedom is such a valuable commodity that it must be "rationed," dissent and behavior are intolerable.

b. The economy must be planned in the Neo-Stalinist sense, as the substructure of the whole culture.

2.2.-- *Humanist socialism.*

Figurehead: the young Marx of pre-1848.

a. Liberation from "Entfremdung," i.e., the industrial society that enslaves people.

b. Income and property equality.

c. Replacing material motives with moral ones.

d. Complete gratuitousness of some goods and services.

40.
The concept of classification.
To classify a concept is to define, within the universal collection or total system to which it refers, the subsets (types) or portions (aspects).

Note.-- Taxinomy (less often : taxonomy) is
a. the science of classification and
b. the act of classifying as an application: the 'data' (data) are tested for 'parameters' (features), notae of content) and so classified.
Conditions.-- To classify properly, one pays attention to two aspects.

1. *Distinguished but not separated.*
a. All traits listed must be different (i.e., no repetition (avoiding redundancy)): anyone who lists all family members but mentions the same person twice violates the requirement for difference.
b. The enumeration must remain within the same collection (the universal) or the same system (the total).

Note.-- Thinking of Platon's stoicheiosis.

2.-- *As completely as possible.*
Classification of a (universal or total) concept is preferably complete. However, often - in the absence of exhaustive data - one limits oneself to the main or prominent types or parts.

Typology.
As always when one organizes, there are two aspects.

1.-- *Distributive classification.*
Let us return to the various social critiques. One can order them all 'paratactically', i.e. situate them in a juxtaposition (a number of places), -- paying attention to the common characteristic which makes them resemble each other: this is how we did it in the previous chapter.

2.-- *Collective classification.*
Here one pays attention not only to the similarity but to the coherence: the three anarchisms interacted as well as the two socialisms. One worked with each other or one worked against each other (common characteristic: communication and interaction).

In this way the aesthetic categories (basic concepts) can be listed side by side: beautiful, -lovely, exalted, -comic, tragic, tragicomic. But if we introduce the concept of scale, then coherence is revealed: small-scale (sweet, graceful) large-scale (elevated, sublime) or small-scale (comic / large-scale tragic). Thus a system reveals itself that only shows its real meaning and place in a whole (Hegel).

41.
Model of definition of a term.

To define something (being) is to render its essence (platonic: the idea) by means of characteristics, the necessary and the sufficient, in such a way that that something is distinguishable (discriminable) from the rest of being (the total reality) from which it is inseparable. In other words: to speak with Hegel: defining is to indicate the place and meaning of something within the living whole of all that is (diachronically: of all that ever was, is and ever will be).

The model 'social critique'.

Bronfenbrenner sees two-three traits or parameters that characterize being (universal set).

a.-- *Irrationalism.*

Most (not the Neo-Stalinists) supporters do not rely on (modern) rationality but on intuition and feeling.

b.-- *Cultural Understanding.*

This decays into rejected counter model and model.

b.1.-- *cultural criticism.*

1. The established society is heading for something negative: hopeless disorder, military dictatorship, new world war, even downfall of humanity (what is called "doomsday thinking").

2. Radical reform and indeed urgent reform (still in the course of this generation) is necessary.

b.2.-- *Cultural Revolution.*

Parliamentary democracies - with free elections, among other things - prove powerless. Revolution - brief and nonviolent - is the salvation. The type of culture that is advocated turns out to be very different as the previous pages show.

Axiomatics.

In fact Bronfenbrenner lists axioms both in the classification and in the definition, i.e. propositions from which thinking and acting are deduced. The concept of 'social critique' (of the sixties at any rate) is defined in the above axiomatic, i.e. a combination of axioms. This axiomatic is the text, i.e. the term, in which the concept 'social criticism' is defined, i.e. in life the whole of all that is, is situated.

Note -- *J.M.. Chauvier, Gauchisme et Nouvelle Gauche en Belgique*, (Leftism and New Left in Belgiu), typified social criticism with us (New Left, Gauchism) as follows:
1. instead of the working man the playful man;
2. self-government in the short term (which is what anarchism is).
Classifiable in Maoism, Trotskyism and anarchism (in the more common sense).

42

The concept of definition (essence).
Definition of Definition.

Something (being) and only that something but entirely rendering that something in its necessary and sufficient characteristics (parameters). That this rendering simultaneously situates that something in the living whole of reality, is inherent (proper) to real defining.

Appl. Model.

Take *N. Perquin, Pedagogy* (*Reflections on the Phenomenon of Education*), Maaseik, 1965, 43: "Education is the assistance of those responsible for the development of the child so that he becomes an adult." -- Behold the axiom that governs parenting.

Continuing Education.

From the corner of those who advocate adult education ("éducation permanente"), one proposes to perfect the terms: "Education is the assistance of those responsible for the outgrowth of the child and the adults so that they become 'adults.'

Note.-- To be completely ready and consistent, one adds to "the adults" the term "biological": "and the biologically mature" and to the term "mature" the term "cultural": so that they become culturally mature. Thus the ambiguity of "adult" is eliminated.

Note.-- By expanding the term "help" and "the outgrowth of the child and adults", its content becomes smaller but its scope (= child and adults) larger. In other words: one knows less what this help can be because it is more diverse.

Definition as a sentence.

The subject (original, definiendum) and the proper verb (model, definiens) must be interchangeable, i.e., totally identical.

This is already evident from the mathematical and logistic expression "a is a". After all, As stated, the whole definiendum and only the whole definiendum is subject. Entire: suppose Perquin forgets the term "outgrowth into cultural maturity," then something essential is missing that helps make up the wholeness of the phenomenon of education. Only: suppose Perquin said "the aesthetic outgrowth" then the definition loses its generality because limited to only aesthetic education.

To articulate completely and only the whole given can be outrageously difficult. In other words : defining can be very very difficult.

42.1
Model of axiomatic definition: the positive integer.

G. Peano (1858/1932), in his *Formulario matematica*, defines the concept of "positive integer" semiotically, i.e., through signs.

Given**. --** Logical terms 'class' (= concept), "member of a class'" copy and 'implication' ("if, then");-- mathematical terms 'number' (= class), 0 (zero), 1,2, ... (copies of number), a, b, c, (letter numbers) are already known (= given) prefixed. This in order to have an appropriate language.

Asked. **--** Requested: definition of "integer positive number", where this wording "integer positive number" acts as a circumlocutory definition that is now converted into an axiomatic.

Peano creates a text consisting of sentences that are distinct but not separate (system) and consistent. The sentences represent the features that collectively constitute the conceptual content.

1. *Zero is a number*.-
If a is a number, then a + 0 = a.
2. *Zero is the successor to no number*.
If a is a number, then a+ (= a + 1, i.e., the successor of a) is not 0.

Note.-- So 0 is the first number and negative numbers do not 'exist' (axiomatically, i.e. by definition).

3. *The successor of a number is a number*.
If a is a number, then a+ (= a + 1) is also a number.
4. *Equal successors have equal numbers*.
If a and b are numbers and a+ is equal to b+, then a is equal to b.
5. *Mathematical induction* (E.L. 73).
If a is a class (term) of which 0 is a member and every member of s has a successor within the class s, then every number is a member of s.

Note.-- This axiomatic system is a true definition: entirely the positive integer and only entirely the positive integer are made distinct from the rest of all that is. Science works with delineated, i.e. defined domains from the whole of being.

That the above axiom system is a comprehension text is shown by the fact that, if one changes the content (under at least one point of view), one immediately changes the magnitude. Let e.g. 0 be the successor of -1 (-1+) (axiom 2), then as a domain or magnitude the negative number is open.

Testing. Whether the definition is "good" will be shown by working with it without encountering inconsistencies (paradoxes).

43.
Categoremes (predicabilities).

The proverb can be a model for the thing to be defined or the subject of a definition in two ways. Antiquities have bequeathed us in this regard the kategoremen and - what is further developed - the categories.

Distributive traits.

'Katègorèma', Lat.: praedicabile, is actually 'saying'. However, let us take an applicative model, namely a killing of a girl.

The five distributive viewpoints.

Lat.: "quinque voces". Porfurios of Turos (233/305; late antique theosophical thinker) brought them up in Aristotle's wake.

a.-- *General and non-general characteristics.*

Every being has characteristics but some are essential and others are not.
1. 'ldion': Lat.: proprium, creature.-- Here: any killing or murder involves in all cases putting someone down, killing,-- taking life.
2. 'Sumbebèkos', Lat.: accidens, non-essential trait, accidental property, not ascertainable in all cases.-- Here: by means of a series of knife stabs.

b.-- *Classification characteristics.*

These allow one to distinguish and define aspects (portions) within a general concept (universal set) of species or within a system (collective reality).

1. *General characteristics.*
'Genos'; Lat.: genus, 'genus' (in the sense of universal collection).-- Here: murder.
2. *Non-general (special) characteristics.*
This is twofold.

Specific difference (specific distinction)...
"Diafora eidopoios".
Lat.: differentia specifica.-- Here: a series of knife stabs.

Species.
'Eidos: Lat.: species (type).-- Here: murder by means of a series of knife stabs.
The doctor or police officer who characterizes - defines - the murder, summarizes
"Here is murder by means of a series of knife stabs". One sees that the two first predicabilities (being and accidental) in **a.** murder and **b. by a series of knife** stabs, return but as definitional components.

Note.-- *Linnaeus, Systema naturae* (1758), works with genus name and species name (binomial naming of plants).

44.
Categories (predicaments).
 Collective characteristics.

They divide the subject into parts, aspects from perspectives. -- 'Katègoria', Lat.: praedicamentum, sayability head (what one can say of something).-- Aristotle, probably in the wake of Archutas of Taras (Lat.: Tarantum) (-445/-395) (among others) a Paleopythagorean, saw every being - something - as a system showing several sides. They are recited as systechies.

The ten collective viewpoints.
To begin with, there are two fundamental categories and eight specific ones.

1.-- *The basic couple.*
'Ousia', Lat.: essentia, also 'substantia', main thing. - "Pros ti", Lat.: relatio, side issue (relation).

Appl. model. A murdered girl under the categorical aspects.

Note.-- Traditionally, the side issues (relations) are also called "sumbebèkota," Lat.: accidentia, accidents. Hence "substance and accidents". But this creates confusion because here we are talking about collective accidents or incidentals,-- not the distributive ones mentioned above.

2.-- *The relations (side issues).*
Four pairs of opposites.

1. "Poson / poion" Lat.: quantum / quale, how large / how many. Or quantity / quality.-- Here: just one murdered person / by knife stabbing.
2. "Pou / pote" Lat.: ubi / quando, where (place) / when (time).-- Here in a room where sex parties take place / at night.
3. "Poeiein / paschein" Lat.: actio /passio, make suffer / undergo.-Here: by one or more attackers / girl as victim.
4. "Echein / keisthai". Lat.: habitus / situs, reaction / situation.-- Here: the girl shows signs of resistance / it was apparently overpowered.--
The ancient terms can be interpreted as responding to a situation into which one is thrown. One can also interpret them as purely local.

The doctor or court officers charged with defining the brutal act summarize in a text (term), "Here, on the contrary, is one murdered girl, killed by knife stabbing, in a sex party room, at night, identified as the victim by one or more assailants. It shows signs of resistance but was apparently overpowered".

Note.-- Modernizers sometimes ridicule categories as being too wooden platitudes. Yet the above shows that they still define a collective concept in valid ways.

45.

Typology of definitions.

There are apparently types of definitions.

1.-- *Semiotic definitions.*

All that makes up text in itself (term) - words, abstract signs, numbers, diagrams, etc. - as signs are objects of semiotics.

We call a method of building a definition that thereby limits itself to that domain "semiotic.

Thus the following types:

The descriptive (descriptive) definition gives the usual characters (think dictionaries).

The analytic definition employs the usual characters to introduce a new term.

The stipulative definition employs the usual signs and gives them a new meaning to be determined.

The prior definition is introduced by scientists to delineate their professional language from the usual, everyday language.

The contextual definition situates characters within a context.

2. *Operative (operational) definitions.*

Here, of course, one employs the previous one but one steps outside the sign system and tests against additional semiotic realities.

Thus the following types:

The deictic (ostensive) definition: beholding education e.g. shows what is definable and attaches a term to it.

The usage definition includes the ostensive: a device one shows, but uses while explaining (i.e., defining).

The algorithmic definition designates an infrastructure (conveniences e.d.m.) and indicates an order of actions: thus the many kitchen instructions in cookbooks.

As an aside, here we encounter a type of extended definition that makes up an entire text. Why? Because a food or drink to be prepared cannot be described in a short definition. Therefore we defined 'term' as text.

The industry definition defines algorithmic: infrastructure and method of creating a product (think assembly line in a cookie factory).

The physical-operational or -operational definition indicates the physically useful procedures. Reference should be made to *P. W. Bridgsman, The Logic of Modern Physics*, New York, 1927-1; 1960-2.

Transferable to the gamma sciences: a study of sadness, for example, first establishes the 'criteria', i.e. the physical characteristics of sadness, in order to arrive at an operational definition that can be used by doctors or psychotherapists.

46.
Partial and overall definition.

Bibl. sample: *Ch. Lahr, Logique,* Paris, 1933-27, 498s. (*Définition de mots et définition de choses*). The author distinguishes nominal and real definition.-- These terms are strongly misleading and are replaced.

1.-- *Partial definition (nominal def.).*
It suffices that one knows of something at least one essence ('idion', ever-present property) in order to give it an obviously partial and in this sense provisional definition.

Appl. Mod. Gold has long been known to be yellow, air and water resistant, the most malleable among all metals (a sheet of 1/10,000th mm. can be made from it). Defining it in this way is sufficient for e.g. goldsmiths.

2.-- *Overall definition (real def.).*
To know of something all its essential features allows for an overall definition.

Appl. model. Since more recent physics, one knows, e.g., that gold (Au from aurum) has as its atomic number 79,--that its atomic mass is 196.97 and its melting temperature is 1,064° C. In other words: physics is approaching the "real" (business) definition more and more.

Scientific work.
Lahr: "Scientific inquiry starts with a 'nominal' (word, satisfying itself with a 'name' (Lat.: nomen) definition. With the goal: the real.

By the way: in platonic language: it starts with a lemma (a provisional designation of the being or idea).

Opinions. Lahr cites two, opinions.

Some logicians reduce the nominal (partial) to the real definition: "One cannot present the nominal without presenting the real". - To which Lahr: "One can define something ready (*note* : partially) without knowing the whole nature (*note* : all the features) of it".

2.-- *Some logicians reduce the real definition to the nominal one.*
So *John Stuart Mil* (1806/1873; *System of Logic* (1843)).-- Any real or business definition is nothing more than a mere nominal one! This boils down to the fact that one can never know all the features of essence of anything.

Note.-- This reflects the discussions between conceptual realists and conceptual nominalists. -- With *O. Willmann, Abriss der Philosophie*, (Outline of philosophy), Wien, 1959-5, 366, we argue that very often "being" (all knowings) is an 'x', an unknown,-- a "qualitas occulta" but as a lemma.

47.

Definition of the singular.

A singular (singularized, individual) concept refers to precisely one specimen as a size. How to define such a thing?

Bibl. sample: H. Pinard de Boullaye, L'étude comparée des religions, II (Ses méthodes), (The comparative study of religions, II (Its methods)), Paris, 1929-3, 509/554 (*La démonstration par convergence d' indices probables*), (The demonstration by convergence of probable indices).

Cumulative Method.

One gets stuck in loose features thanks to sampling (induction). By accumulation (cumulative method) of abstractions one arrives at outlining with certainty the unique, the whole unique and only the whole unique in such a way that it can no longer be confused with the rest (division) in its uniqueness.

Distinctiveness of the human individual.

Note.-- A genetic method (DNA) exists to define the singular biological being. However, this method is far from being possible.-- The *Jesuits of Coimbra* (Portugal), in their *In universam dialecticam Aristotelis* (1606), drafted a distich (two-line verse) on the subject.

"Forma (general characteristic) -- figura (view), locus (place), stirps (afkom), nomen (name), patria (fatherland), tempus (time), unum (the one) perpetua lege reddere solent".

Application.

Woman (forma), small (stature), Antwerp (place), of begotten family (descent), Roxanne (name), Belgium (fatherland), date (time) of birth,-- describe the one-time - unum -. This enumeration, accumulation of features, in the long run makes confusion with the rest impossible. And thus defines the one-time.

The great tradition.

Since ancient Greece there has been a tendency to favor the non-singular. "Omne individuum ineffabile" (What is conjugated is unpronounceable in short, abstract definitions).

Consequence: "Non datur sciëntia de individua" (About the singular there is no science)! Where science would only be about non-singular data.

Already the Jesuits of Coimbra - the conimbricenses - broke somewhat with this position. The Romantics even emphasized against abstract-rational thinking the one-off of a landscape or an individual or a culture, whose difference from the rest they strongly emphasized. They played into the hands of the idiographic sciences (as the science of history and geography).

48.
Process definition (praxeological definition).

A process (in ancient Greek 'kinèsis', Lat.: motus, literally: change) is an event that is coherent and thus constitutes a dynamic system.- 'Praxis', action (standing in opposition to 'pathos', inaction), is central to what follows.

Praxeology' (sometimes 'praxiology') is an action theory, a theory of all that is action.-- A praxeological definition proves again that a definition containing all characteristics - which is necessary in practice - must be expressed not only in a short text (term) but also in a long text (term). Otherwise one remains stuck in a vague indication.

Industrial definition.

Ch. Lahr, Logique, 497 (*Définition industrielle*), (Industrial definition), brings us a little example of praxeological defining: paper is made according to a production process that is strictly defined in advance.-- Every praxeological definition includes two aspects.

1. -- Substructure (infrastructure).

Our actions - processing of goods for example - do not take place in the void but are situated in matter, among other things: producing paper presupposes

a. materials and
b. implements (wood, formerly at least chlorine etc.; the pestle etc.).

As an aside, teaching also presupposes a whole infrastructure (school building, classroom, benches, lectern, books, notes on paper, etc.).

2. -- Superstructure (suprastructure).

The requested task is e.g. making paper. The solution consists of a logically programmed sequence of operations i.e. an algorithm.

Note.-- Around 825, in Baghdad, the Islamic mathematician Al Chwarizmi wrote a work on the rules of arithmetic in India. In the XIIth century this work was translated into Latin: *Algorismi de nurnero Indorum*,-- By the hand of *Al Chwarizmi* (a work) on number among the Indians.-- The term "algorism" or "algorithm" dates from that mid-century work.

Dynamic system.

An algorithm, outside of mathematical domain, is :
a. a starting situation (the raw matter from which paper is made.
b. intermediate situations (a series of operations);
c. a final situation (here: usable paper).

The algorithmic process description has all the traits of the definition: the process, entirely (in detail) the process, just entirely the process, i.e. the course of all actions.

49.

Algorithmic definitions.

1.-- *Kitchen definition.*

Bibl. sample: *Da Mathilde, 325 recettes de cuisine créole*, (325 recipes of Creole cuisine), Paris, 1975, 215s. (*Riz doux au lait de Cocco*), (Sweet rice with Cocco milk), .-- Numerous people in the kitchen take an algorithmic approach. One example.

a. -- *Infrastructure.*

Cookware. Fire.-- Ingredients: a well-ripened 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.-- *Algorithm.*

1. To strip the coconut of its bark. Pierce with a nail that is hammered into the head holes. Collect the juice in a bowl.

2. Breaking the nut with an axe. Fluffing the debris so that the brown epidermis is removed. Grating. Result: a mush.

3. Pour the mash into a bowl. Pour in the bowl with fruit juice.

Add a glass of water.

4. Pour this rather liquid mash into a large enough piece of gauze or tulle. Wring out over a container. Result: a rather dry mash.

5. Meanwhile, gently cook the rice on the stove until it is really cooked through.

6. Mix rice and coconut milk. Add sugar as well as nutmeg and cinnamon.

7. Let it linger and enjoy! **8.**

Note.-- Da Mathilde ranks the result with the desserts.

2.-- *Main and written arithmetic.*

Thus the multiplication 27 x 35.-- The infrastructure in mental arithmetic is minute! Initial act: e.g. 20 x 3 Intermediate act: 7 x 35. 700 + 245. Final act: 945.

Scripture arithmetic requires a minimal infrastructure of course. The set of operations includes a clear configuration (placement of units, tens, hundreds as seen E.L. 25). -- The set of operations, however, takes place after -- one in the form of an algorithm.

Note.-- In the kitchen definition, it appears again that a real definition does not require a vague name like "Soft rice in coconut milk" - a text as a term.-- Immediately, it appears again that an algorithm is a dynamic system: a sequence of actions (praxeology) but with logical coherence. It is thereby a goal-oriented system: from the outset there is a clear goal in mind. And this in the form of an initial act, intermediate acts, final act,-- none of which may be missing, otherwise the whole final result will not be there.

50.
Convergent induction.

Bibl. sample: *H. Pinard de la Boiullaye, L'étude comparée, II* (*Ses Méthodes*), (The comparative study, II (Its methods),),), 509/554 (*La démonstration par convergence d'indices*), (The demonstration by convergence of indices).

This form of induction is searching. Instead of redoing tested samples (repetitive induction), one takes,-- quasi -lucrative, samples (groping induction). If only they:

a. Converge, in the same direction, the one sought, pointing (eliminating the anomalous samples),

b. be cumulative, accumulative.

This is how one defines the wanted.

Indications.
In Latin 'indicia' These must be independent of each other and yet be unanimous. Because to the degree that they agree, to the same degree they provide information and become models for the original, the wanted or 'X'.

Applicable model.
Someone comes into a large village, where everyone is talking about a neighborly quarrel. But -- and here begins the requested -- one tells this, another that and a third something else.-- Behold the given. The requested: to find out the truth. Which amounts to a survey, i.e. a series of actions with coherence, aimed at a goal. Which again is a dynamic system. But this time of a searching nature,-- success and failure, i.e. true and untrue information.

Platonic method. Platon is already known in antiquity as the founder of the lemmatic-analytic method.-- Here: the lemma i.e. the preliminary hypothetical version, e.g. the first story.

The analysis consists in testing this first story by means of samples that make up the sequence of the survey. For example, a whole series of people from the village are questioned. Until, -- from the samples, a version approaching the objective truth gradually emerges.

Note.-- This searching induction is loved by children: after all, treasure hunting has just the same structure.

Theories.
a. They are samples; therefore, induction.

b. But groping samples. There is no question about that.

I.. Newton (1642/1727) defined this method by means of a model: as a regular polygon, when infinitely multiplying its sides, has as its limit (limit) the circle and approaches it, so does the convergence proof. This is only an equation. More to the point: a survey proceeds erratically where Newton's model involves a non-erratic multiplication of the sides.

51.
Judicial definition.
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," the "X," is what investigators, judges and so on define in the form of an inquiry.

1. *Story 1.*
Ms. A., living with her "boyfriend" since she was 21 years old, maintains that she was "assaulted by her father six years ago. Whereupon the boyfriend persuades her to report it.-- The term "assault" is a legal term, a definition.

2.1. *Story 2.*
The father confesses that he was once alone in the house with his 15-year-old daughter but only administered "a hefty rattle." -- The term "hefty ramming" is a legal definition.

2.2. *Story 3.*
The appointed doctor explains that he examined them for her virginity and determined its absence.-- The term "no longer a virgin" is, given the legal context, a legal definition.

Significance.
One same (unknown) event. At least two interpretations or representations. I.e. three texts - terms in the form of stories. The judges are not eyewitnesses. So rely only on versions of those involved. Among which there are some that are apparently biased.

Note.-- Such situations are ancient. *Herodotos of Halikarnaasos* (-484/ -425; "the father of land and ethnology"(W. Jaeger)), known for his *Historiai* (Surveys), clearly distinguished -- also for himself as a researcher -- between opsis: direct observation, and 'historia': indirect observation (via tactile induction).

Logical.
1. Stories are texts that define.
2. Those stories are prepositions.
  a. If story 1 is true, then the father is necessarily guilty.
  b.1. If story 2 is true, then the father is necessarily innocent.
  b.2. If story 3 is true, then the father is not necessarily guilty.

In other words : one has the three logical modalities about which later: necessary/not necessary (possible)/necessary not (impossible).

Wagenaar believes that legal narratives do not represent logic. But that is manifestly false after our rendering. Wagenaar has a totally false definition of logic in his mind. "Where stories do convince logically.

52.
Definition of culture.

We started this course with the systechy "statement (GG + GV) / solution (OPL.)".

1. Mathematicians working on problems are very familiar with this scheme.

2. The Hegelian notion of "real" means "what a task solves," Do we, in that light, dwell on the notion of "culture!

Widening.

With Hegel's definition of "reality," i.e., the ability to cope with its task, the broadening of what mathematicians have long practiced occurred. Culture is problem solving. She is:

a. grasping the given and the requested (the task) and

b. meeting the requirements of the request.

Whether it is a water pipe that needs to be repaired, or a computer task: whoever solves problems shows that he / she is real, i.e., up to the task.

Benefits of this definition.

1.1. She allows primitive cultures to have justice. After all, primitives were once rejected by moderns as "savages," later as "nature people. Where, thanks to ethnographic research, free from ethnocentrisms, it turns out that primitives also solve problems,---sometimes better than moderns.

1.2. But this definition also situates the most advanced - modern and postmodern - cultural data.

2. It integrates both the vernacular and elite strata of humanity into one comprehensive concept of "culture.

Note.-- Exist.-- One knows the transcendental concept of 'existence' (which reflects one aspect of all that is), namely, the actual existence without more, peculiar to all that is non-nothing. Since S. Kierkegaard (1813/1855), the father of existential philosophy, a notion of 'existence' or better still, because it accentuates the active, 'exist' has been in circulation which means "as a human being actually existing in the world". God, the plant, and the animal actually exist as being-without but they do not exist in the Kierkegaardian sense.

Well, existing is definable as "being thrown into the world - with its situations - with the task, -- thanks to a design, i.e. acts of free choice, of being able to cope with the world". Therein lies the Hegelian concept of "really being" as a human being in this world. Therein lies the given and the demanded grasping and the wanting of the solution - at least in principle, being able to cope. Man as an existing being is culture-building.

53.
Definition of beauty and work of art.

Bibl. sample: *Brigitte Helmer, Nach der Brillo Box (Arthur C. Dantos Philogphie zeitgenössischer Kunst)*, in: *Neue Zürcher Zeitung* 10/11.05. 1997, 67.

Author discusses *A.C.Danto, After the End of Art (Contemporary Art and the Pale of History)*, Princeton Univ. Press, 1997.

Hegel in his time talked about the end of art. Danto believes that this actually occurred in 1964: since viz. the Readymades of Andy Warhol (1929/1987; painter and filmmaker; representative of pop art). Warhol had in the back of his mind cultural criticism as a figure of Counterculture.

Behold the given. The asked: how to define beauty and artwork after Warhol's seemingly beautyless and artless "works"?

Traditional aesthetics,
i.e. theory concerning the beautiful and the work of art, laid strong emphasis on the objective properties of something insofar as it is beautiful and/or work of art.

Danto's point of view.
What distinguishes the Brillo Box (see photo) - in its experiential qualities - as it was 'aestheticized' by Warhol, from the sales product it was before Warhol aestheticized it? Certainly not in terms of objective qualities, because the art product did not change the sales product in the stores. Then what did?

Danto.
Works of art differ from non-art works o.k.a. cultural context. The objective work does have its unmistakable characteristics but suddenly, in the context of the Counterculture - founded by the Beatnik's (1950+) and the hippies and zippies etc. (1962+) with their social critiques of all kinds - an ordinary object like the Brillo Box acquires 'aesthetic' value.

Indeed: if, with the Ancient Greeks, all that is clean is definable as be- and wonder provoking, this is not without a cultural context.

54.

A text as definition.

To define is to identify, i.e., to represent the identity of something.

Bibl. sample: *H. Marrou, Histoire de l'éducation dans l'antiquité*, (History of education in antiquity,), Paris, 1948, 239.--There it is mentioned that pupils first listened to a story (Gr.: muthos, evangelia; Lat.: narratio). Then they made a report (rapport) of it.

On a papyrus such a report was found. Given: the student(s) rewrites, using their own words as much as possible but truthfully. What can be called 'paraphrasis'.

1.-- *The text .*

"A boy who had killed his father and who feared the legislation on parricide fled into the desert. As he passed through the mountains, he was chased by a lion. With the lion at his heels, he climbed a tree. Then he saw a snake ('dragon') rushing towards his tree, perhaps to climb it too (...). While he was fleeing from that snake, he made a trap.

The malefactor does not escape a deity : "The deity will subject the malefactor to judgment.

Note.- The words shown in quotation marks are words quoted from memory.

2.-- *The structure.*

The text is a term, i.e. an articulated concept.

a. *Conceptual content.*

This is articulated in what traditional literatology (literature) calls the moral lesson. Here: The deity will subject the evil one to judgment (note *:* punitive intervention). Shorter: "The divine judgment that afflicts an evil one." Note the universal wording.

b. *Definition of scope.*

Out of the whole extent referred to in the moral lesson or thesis, i.e. out of all the cases Of divine judgment, the story extracts precisely one sample.-- One sees that the inductive method is at work here.

Content/Size.

Without the sample, here the narrative, the content of the concept of God's judgment is empty. Without the moral lesson, the content (here the proposition), the sample is blind. The scope must be represented by at least one sample if the abstract universal sense, the moral lesson, is not to remain "abstract. "Grau ist jede Theorie Grün des Lebens gold'ner Baum" said Goethe (Colorless is every universal conceptual content. Colorful, however, every concrete sample from the scope of understanding).

55.
Terms as themes.

Bibl. sample: O. Willmann, Abriss der Philosophie, Wien, 1959-5, 10/12.- The scholastics (800/1450) distinguished more than one form of term.

1.-- *A word.*

"Unum vocabulum".-- Such a task seems 'simple' because limited to just one word. Thus e.g. "The girl" or "Labor".

In such an original (subject), no caveat ('modality') is mentioned. Purely logically, such a topic encompasses the whole (the whole girl, the whole labor), all specimens (all girls, all labor), the whole of all specimens (the coherence encompassing all girls, all labor). Which would make for an encyclopedic text as an essay.

In fact, the theme is not "exhausted" (exhaustively elaborated) in this way but sticks to the essence: "The girl as girl"; "Labor as labor.

2.-- *A relationship.*

For example, "The Girl and the Boy" or "Labor and Economics."
Here a caveat is introduced: not the girl as girl but the girl in his relation to the boy or labor in its relation to economy.

3.-- *A judgement.*

"Propositio aliqua". -- So e.g. "Young girls invariably have problems of their own" or "Labor can be a pleasure but is usually a burden". -- Here the caveat is even stronger: not the relations without more e.g. but precisely one relation expressed in the sentence.

4.-- *A whole text.*

Willmann does not mention this kind of theme. Perhaps the scholastics reformulated such a massive subject (original) into a set of judgments that has a coherence (a system of judgments). The coherence then comes from the one main term.

For this we refer to the previous chapter where an antique small essay - even then as a paraphrase, i.e. a true-to-life rewriting with one's own words, reduced to about ten lines - was requested. This is a minimal form of essay of course.

Content/ Scope.

In an essay - e.g., a treatise - the first thing to be discussed is the conceptual content (if one wants a briefly held or if necessary a long, elaborated definition) with at least one sample from the conceptual scope (to make it concrete). This is the basic rule of textuology or textology.

56.

The antique chreia (category list).

Bibl. sample: *H.I. Marrou, Histoire de l'éducation dans l'antiquité*, Paris, 1948, 241, says that the chreia -- literally: usability -- with the platitudes, i.e. points of view from which a collective understanding is approached, amounted to "a small page" in ancient secondary education, in its elaborated text.

As an aside, "loci communes" platitudes, are being aspects of a given. They make up the idion, the essence, of a reality. Hence the fact that they recur again and again following any given. This proves their general nature.

Note.- A certain mentality pejoratively denotes any platitude in the name of originality ("originality"). Which, of course, is untenable as a general assertion: even the most original human being exhibits only an original version of the platitudes peculiar to all human beings.

Ambiguity.

The many points of view of chreia (one also says: chrie) betray the care of the ancient teachers to impress upon the students the ambiguity of everything. This avoids gaps and one-sidedness.

Note.- One compares the chrie with Aristotle's categories: it represents the - let us say - educational categories.

The chreia as a definition.

None other than *J.Fr. Marmontel* (1723/1799; *Eléments de littérature* (1787)) says that the chreia is a definition. It is clear that Marmontel thereby departs from a certain tradition that limits the term 'definition' to a sentence - what we call the brief definition - and stands up for the term as a text that constitutes the elaborated definition. At least of a collective theme.

The structure.

Two mnemonic formulas from antiquity are in circulation.

1.- *introduction* .-- *middle*.-- Quis? (Who?). Quid? (What?). Cur? (By what, why?). Contra (Counter model). Simile (model). Paradigmata (Examples). Testes (Testimonies). - *conclusion*. - **2.** Derived from Afthonios of Antiocheia (270/ ...).

Introduction.-- *middle*.-- Paraphrasis (Who? What?). A causa (Explanation: why, why?). A contrario (Counter model). A simili (Model). Ab exemplo (Example). Testes (Arguments of authority). *Conclusion* (A brevi epilogo, o.g. a short epilogue).

The sequence need not be performed mechanically, of course. It is heuristic (set in motion by the invention).

57.

An applicative model.-

This is one sample from the entire scope of chreia.

1. *What?*

The actual theme: "The roots of education are bitter but the fruits taste sweet". This is a quote from Isokrates.

Note --The "What?" can also be an act, an event.

Note -- The theme includes a trope: "root/cause = fruit/effect". Translated the process of education is difficult; the result is a delight.

2. *Who?*

Isokrates of Athens (-436/-338) was a very famous rhetor (rhetoric teacher) and logographer (text editor). When he saw that the Greeks were not finding comprehensive political unity, he allowed himself to die of hunger to demonstrate his political ideal.

3. *Model/counter model.*

As a plant, if cared for, thrives, so does the educator(s). As the plant, once neglected, yields diminished returns, so does the one whose upbringing was neglected.

4. *Examples.*

These are samples from the scope (induction).-- E.g. Demosthenes of Athens (-384/-322): although by nature weak as regards voice, he could, thanks to rock-hard exercises, for years perform brilliantly as a great orator in the agora, the public assembly.

5. *Authority arguments.*

This is what the ancients call "testimonies. Here one can quote people who can 'speak out' on the subject of the "educational process as difficult/ educational result as enjoyable" - because that is the actual theme, expressed in naked, non-metaphorical terms. - Contemporary opinion polls, for example, come into their own here.

6. *From what? Why?*

Note.-- Many people confuse the Dutch terms 'why'/'why'. "Why?" is answered by a causal process that objectively takes place. If necessary, one can count the unconscious motive among the causes, because free choice plays practically no role in it. 'Why?" is answered with a reasoning sentence because the term asks about the (conscious) motive.

One can quote Isokrates himself here. He was very timid of temperament and had a weak voice. As a result, he could not become an orator (there were no speakers then). So he had to stay out of politics. Nevertheless, he became very influential thanks to his "sour" efforts. Thus he knew what he was talking about when he spoke of the "bitter roots" of education and "its sweet fruits".

58.
Judgmental logic.

Aristotle: "To say of something" is to judge: "Katègorein ti tinos". As title of his work on judging he takes "Peri hermèneias" (Lat.: De interpretatione). What implies that he conceives of judging as indicating - interpreting - viz. of the subject by means of the saying.

Indeed: to judge is to identify with the subject the saying **a.** wholly, **b.** partially, or **c.** not at all (cf. identitive logic).

The term.

Just as the concept is expressed in an appropriate term, so also the judgment is expressed in an appropriate term, i.e. the sentence or proposition (statement). Indeed; one can define a judgment by.
a. subject (which is original, i. e. information seeking), the judgmental subject),
b. saying (which is model, i.e. informative), the judgment predicate,
c. modalities, about which later.

Note -- "It's cold". -- The term 'it' is an agreed subject that semantically refers to e.g. "the weather" or even "the weather as we sense it". For cold is a sensation, expressing the subjective impression emanating from something objective (the objective weather).

Style judgments.
Bibl. sample: K. Krüger, Deutsche Literatukunde, Danzig, 1910, 116 (Figures).

Let us consider an applicative model. Let us take the exclamation: "How impressive this tropical forest". To begin with: the term 'is' is concealed, unsaid. Immediately it is an expression of feeling.

1. Admittedly, it is a determination judgment that indicates an objective fact, i.e., the tropical forest with its aura or radiance.

2. But the observation runs together with a shudder of aesthetic nature, recalling "the sublime" (the sublime) or "the great."

Observation structure. -- It is about the tropical forest. But in such a way that the encounter with that 'objective' fact, indicated in the subject, leads to the subjective perception. The subject is spoken of in half-objective half-subjective terms (model) however subjective, the sentence provides information concerning the subject.

Remark. Already Platon of Athens spoke of logos, judgment, in which he distinguished onoma, Lat.: nomen, noun part, and rhema, Lat.: verbum, verb part. Now one says: nominal and verbal componente (W. Chomsky).

59.
Quantity/quality of judgment.

1.-- *Quantity.*
The scope of the subject's content decides the distributive or collective scope.-- For example, just one bird was observed in the forest (singular) - Some / all birds were observed in the forest (private / universal).

Collective: Just one plume of the bird was observed.-- The bird was observed partially / completely- (sing., part., total).

Note.- Transcendental concepts (are(s), true(s), good(s) (value)) can also be subjects in their way: "Being is amenable to insight."

2.-- *Quality .*
Identity regarding the "subject/sentence" relationship decides quality. The saying can be model, intermediate model, and counter-model of the subject as it is fully, partially, or not identifiable with the subject.

Thus.-- Affirmative.-- "That wall is white". - Affirmative/denial with reservations.-- "That wall is white and not white".-- Denial.-- "That wall is not white". In other words: model / intermediate model / counter model.

Note -- "That wall is white and not white". -- Note: " white and not white" here is not an inconsistency (contradiction, contradiction) but a figure of speech.

For example, two house painters are standing in front of a wall they have to whitewash. They look at it carefully. Since the wall was once, years ago, painted white, a patina (visible layer of age on a surface) has appeared on it. Their verdict: "That wall is white and not white". This is an affirmative / negative, i.e. restrictive, judgment. As a figure of speech, it amounts to "That wall (if impure white can still be called 'white'), white and (if pure white is adhered to) not white". Or: white with reservation or restriction. Intermediate model, reminiscent of model but also of counter-model.

Nuanced judgment.
"Christianity is in some sense (definition) a humanism and in some sense (definition) not a humanism." -- Again: intermediate model depending on one's definition of 'humanism'.

If one defines 'humanism' as, e.g., "the tenor which places man at the center but does not exclude religion," then Christianity is a humanism. However, if 'humanism' is instead of inclusive (including) exclusive (religion o.m. exclusively), then Christianity is not a humanism. One sees that defined terms are decisive!

60.
Subject / predicate / clauses (modalities).

A proposition, i.e. a judgment term, includes, grammatically, a term whose inflection (flexion) depends on the verb (the subject) and a term that is a verb (predicate). The rest either belonging to the subject or to the predicate is called clauses. These modalities influence, or do not thoroughly influence, the judgment itself.

Appl. Model.
1. The attributive clauses e.g., "stands by" a non-verb phrase: "He, the womanizer, had already noticed them" (in which "the womanizer" is, as a noun, by "he" and is called "apposition" or "adjustment"). Clearly, this apposition contains the reason for the verb.

2. The adverbial (adverbial) clause "stands by" a verb: "Suddenly she showed up" ("suddenly" is adverb).

Reality modalities.
Bibl. sample: G. Overdiep, Modern Dutch Grammar, Zwolle, 1928, 13/15.-- These modalities are also called "logical modalities. See here the list.

A.-- lnterrogativus. "Does a girl appear on the beach? This nuance leaves all other modalities open. She is basic.

B.1.-- Realis.-- "A girl appears (actually) on the beach.
B. 2.-- Concessivus.-- "Nevertheless (notwithstanding that) a girl appears ... Both are factually indicative.
Opm.- Necessarius.-- It is necessary that a girl ...
B2. -- Potentia1is.-- "Perhaps (maybe) a girl will appear ....
B.2.-- Dubitativus.-- "Would a girl appear on the beach?~ --
B.3.-- Conditionalis-:-- "In that case, a girl appears .....
These three modalities are possibility indicative (mere possibility, doubtful possibility, conditional possibility).

C.-- Irrealis.-- "No girl appears on the beach~'-- This is a factuality denying modality.

Note - Overdiep forgets one more modality that reinforces the disavowal, namely, "It is impossible (unthinkable) for a girl to appear on the beach." Which is the "impossibilis".

Note.- Mathematical formulas are assertions, judgments, but expressed in an appropriate language. For example, Einstein's formula: "$E = mc^2$". The energy, E, is equal to the mass, m, multiplied by the speed of light, c, in the square (c^2). One can safely denote 'c^2' as a modality that "stands by" m (mass),--a multiplicative modality.

61.

The modalities in logic.

Bibl. sample: G. Jacoby, Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung, Stuttgart, 1962, 61/64, where it is said that logic, strictly speaking, knows only the following differential: necessary - non-necessary (possible) - necessarily not. The latter stands for "impossible.

1.-- Within the concept.

"A necessary evil". "A possible good". "An impossible thing." -- These are terms that stand for concepts. One does not get caught by the many words that make up one term, i.e. one concept.

2. -- Within the judgment.

We have actually already seen this, with all the variants, in the previous chapter in which we supplemented Overdiep's list with both necessary and impossible. But look.

"A is (necessarily) A". The identity axiom deals with total identity.

"A and B are non-necessarily identical." -- Here we are talking about partial identity (= analogy).

"A and non-A are necessarily nonidentical." This is the inconsistence principle, which involves radical mutual exclusion just as the identity axiom involves radical inclusion.

3.-- Within the reasoning.

According to *I.M. Bochenski, Philosophical methods in modern science*, Utr./Antw., 1961, 93, there are two basic forms ('modalities') of reasoning. In the formulation of W. St. Jevons (1835/1862) and J. Lukesiewicz (1878/19S6) they read as follows.

Deduction.

If A, then B. well, A. So necessarily B.

If viz. A is the necessary and sufficient reason of B, and A is there (given), then B is necessarily there.

Reduction.

If A, then B. Well, B. So A.

Here the derivation is only a hypothesis. Nothing more and so it is non-necessary.

Note.- The term "modality" usually means "restriction" or reservation" (so in the mental restriction of a liar or in legal texts (contracts e.g.)).

In Hegel's phenomenology of "the absolute spirit" (essence of all that is), modality means "a (cultural) historical manifestation, or 'form', of the absolute spirit."

62.
A text may be thoroughly influenced by a context.

We just saw it in the previous chapter: 'modality' is sometimes a (psychological) restriction, sometimes a (legal) accessory (condition) or, in Hegel's case, a manifestation of the absolute spirit which, according to him, constitutes the idea of the total reality. What context can do! So much for the terms.

Also a judgment.
A proposition can seem like a closed system, comparing a subject (original) to a saying (model). And only that seem. And yet: we check this.

1.-- *"Hilde runs"*
This may mean that Hilde practices running either as a leisure activity or as a profession or secondary occupation. If so, this means "Hilde is a runner".

Note.-- Then she belongs to the collection of runners as a runner she is a runner (copy).

2.-- *"Hilde runs"*
However, this can also mean that Hilde is now running (the durative aspect of the verb walk). Then it means, "Hilde is (now) running".

Note.-- Then one looks at Hilde as someone (= a system) who, in addition to a lot of activities, also practices the runner, yes, that she does now. Then the sentence means one aspect (part) of the complex (system) that makes up Hilde, systemically.

Note.-- One forgives us this "learned" analysis of a simple everyday fact. But here we are in logic! In the logic of daily life among other things.

Conclusion. Without the context, the proper meaning of the phrase discussed remains undecidable, because open to more than one interpretation that is very clearly of a context. In other words: the context depicts, -- penetrates deeply into, the text! This is not a closed system of words, resp. a term, but a quasi-closed system.

The unsaid.
In recent years - especially in French thinking circles, among others - one talks about "what is not said" - le non-dit, i.e. the unsaid. Apparently absent, what is not said is nevertheless present.

Note.-- Separately, the term "greater than" is not only mathematical but also e.g. psychological ("an authority greater than that of another sharer"). Whether "greater than" is mathematical or not is clearly evident from the context such as "3 greater than 2". Contextually decidable. Textually undecidable because ambiguous according to context.

63.
Theme: a material and many formal objects.

A theme, subject, is a being that requires models (information) as an original. The Medievalists distinguished between (one) material and (many) formal objects in a theme.

1.-- *The material object.*

That is the theme as unmeaning, "brutal," given or fact. -- To concretize, we take as the theme "a murder of a girl". This is the given before any attention, at all, is focused on it. 'Material' here means "totally identical with itself," i.e. the given with all its aspects and relations.-- One sees that this is primarily a collective concept.

2. -- *The formal objects.*

The being - the material object or idea (in Platonic terms) - can be approached in more than one way, i.e. from multiple points of view and this by sampling. So that here we face the 'whole-ization' induction. Let us think of Aristotle's categories and the chreia. The formal objects are categories but of a very flexible nature. -- Do we consider. For the basic category is the material object and the other, subsidiary ones are the formal objects.

a.-- *The formal object of the police.*

What interests the police, in the given, is all that is judicially significant. From there "the necessary observations". That is the first sample in the whole.

b.-- *The doctor's point of view.*

In examining the corpse, the law doctor has his point of interest in the fact: that is a second sample in the same whole.

c. -- *The journalist's point of view.*

As a comrnunication scientist employed by a magazine, this one pays attention to something different from the two previous interested parties: what news is present in the slain girl. That is his sample in the same whole.

d.-- *The formal object of a passerby.*

This one pays attention to what his eye - through the meshes of the police cordon - can catch regarding details that interest him as a man of the street: yet another sample in always the same whole.

Conclusion.

The 'forma' or 'notion' that constitutes the formal object in a given is a multiplicity. This makes us pay attention for the umpteenth time to the multiplicity of those becoming the subject of sayings in judgments. This says something about judgments without more.

64.
Comparative (comparative) method.

Ordering - and judging is ordering - is done on the basis of unity-in-quantity. This unity is twofold: resemblance and coherence. These connections are uncovered by means of comparison.

Attention.

Everyday usage often confuses 'compare' with 'equate'. Logical language, however, defines 'compare' as "to examine more than one data for their connections" and to confront them with one another to see whether there is either total identity or partial identity or no identity at all. Comparing must be understood identitively.

1. -- Inward and outward comparison.
Bibl. sample: H. Pinard d.l. Boullaye, Etude comparée des religions, II (*Ses méthodes*), Paris, 1929-3, 40/87 (*Méthode comparative*).

One and the same object - e.g. a religion - can be dissected on the set of relations (links) either within that object or outside that same object. Thus a religion which one first 'compared' (dissected) internally, by examining the aspects (categories, parts) of it (inner structure), also shows relations with its environment (the culture e.g. in which it is rooted).

2. -- Quantitative and qualitative comparison.
Bibl. sample: H. Van Praag, Measuring and comparing, Teleac/ De Haan, 1968, 24.-- 'Measurement' is a comparison of quantities because one compares the thing to be measured (original) with a quantitative model, i.e. a model of measurement. Thus a meter, for example, is a model in terms of which one can speak about an original - the height of a church, for example. This is judging.

But one can define -- very analogously -- "measurement" as a comparison of qualities. -- For example, we judge a groped object as a subject in terms of "not/ somewhat/ rather/ very cold". Or in a discussion we say "Our views are 'not far/ fairly/ very far' apart". Here we are comparing in measures but qualitative measures then. The measures then are the terms of a differential.

Note.-- All this is, in antique terms, stoicheiosis, analysis of parameters in their connections. *P. van Dorp, Aristotle on two workings of memory* (*Platonic reminiscences*), in: *Tijdschr. v. Philos*. 54 (1992): 3 (Sept.), 457/491, distinguishes "vague memory" from orderly memory, where "memory" is the comparative ability.

65.
Judging relies on comparison.
Bibl.st.: *Ch. Lahr, Logique*, 226s. (*Le jugement et la comparaison*).

1.-- *All logicians*
are of the opinion that part of our judgments rest on comparison, viz. insofar as the judgmental person thoughtfully and consciously compares the subject with the saying.

2.-- *Not all logicians*
also agree that judgments in which the judge unthinkingly and unconsciously links the original to the model rely on comparison.

Th. Reid (1710/1796), V. Cousin (1792/1867) and others claim that sentences like "I exist" or "I suffer", "It is cold" or even "The snow is white" etc. do not rely on comparison, because only afterwards would the judge be able to really compare.

3. -- *Aristotle and with him a whole series of logicians*
 (ancient, middle ages, modern times) claim that even the unthinking and unconscious judgments rely on comparison.

Says J. Locke (1632/1704), "A judgment is the sensation of a relation of either fitting together (affirmative judgment) or not fitting together (negative judgment) of two contents of consciousness ('ideas') already observed and compared.

Appl. Model.
"I exist" or "I suffer." I experience the fact that I exist or suffer. As it concerns myself, I think in terms of "I ..." whereby a saying is the most correct possible expression of what I experience. We all find this model - in its articulated form - in our language vocabulary, i.e. the system of all possible information (linguistic models) available to a language.

If, therefore, my experience of existence or suffering is there, then spontaneously but not without comparison of, on the one hand, my experience and, on the other hand, my language vocabulary in this regard (semantic meaning) I choose the language model that fits that experience and say "I exist" or "I suffer."

Note.-- The whole issue is:
a. one does not confuse words with terms, including here;
b. the question whether there is unconscious thinking as well as conscious thinking which is and remains real thinking although in an unconscious way, is the main question in this discussion.

Comparison can be done extremely quickly such that it proceeds quasi-thinklessly but is and remains rigorously logical. Where do schoolchildren get grammatically correct language without ever having explicitly gone through grammar?

66.
The judgment term "not.
Bibl. sample: *D.J. Mercier, Logique*, Louvain / Paris, 1922-7, 108.

A.1.1.-- *correlative opposition.*
"The mother (though the mother of it) is not the daughter." -- The opposite terms in this case are reciprocal terms: there is no mother without a daughter (if the latter is the child). -- Similarly, "The ruler is not her slaves".

A.1.2.-- *counterfactual contradiction.*
"Rainbow red is not rainbow violet". -- The colors of the rainbow can be interpreted, on a physical basis, as a differential, i.e. the spectrum of colors. - Together they make up the same coherence (system) and within this system they differ. This difference is expressed in "One color is not the other".

A.2.-- *privative opposition.*
"A blind person does not see"-- Here the difference from the sighted is expressed. This 'not' expresses deprivation of what either normally or ideally should be there.

This "not" is also present in the language of the disappointed - frustrated: "Life has not given me what I expected from it. This is often not uttered without a neurotic bitterness: that is how strongly the deprivation is felt.

B.-- *contradictory (inconsistent) 'contradiction'.*
As is clear, "opposition" is in quotation marks! Why? Because there is actually no contradiction. Because one term 'is' while the other does not 'is'. In other words, the axiom on contradiction ("Something cannot be and not be at the same time") reigns supreme here.

Appl. model.
"Being is not nothingness." Note that "nothingness" is a figure of speech in which one pretends talker-wise that what is absolutely nothing would still be "something. Ontologically, nothingness is absolute nothingness, though, linguistically, it is an (empty) term.

This is always the case when one uses transcendental terms - be(s), true(s), value (good(s)), one(s) - in their ontological, i.e., real, sense.

Note.-- *D. Nauta, Logic and Model*, Bussum, 1970, 27v., defines the proof from the absurd (incongruity) as follows. The premise is that there exists a counter-model (an example) that satisfies the data but not the requested one. Of that counter-model one shows that it is "absolutely nothing",-- unthinkable. So that the model is surplus.

67.

"A square circle is unthinkable because absulutely nothing."

Bibl. sample: *Ch. Lahr, Logique*, 495s. (*Règles formelles de l'idée*), ((Formal rules of the idea).

We note that Lahr, like the moderns generally, does not understand the term "idea" platonically but as human "understanding. He discusses two unthinkables: "Pain is unconscious" and "The square circle exists." Note: the sentences are linguistically pronounceable but ontologically, i.e., paying attention to their actual reality (the idea in platonic terms), non-existent, indeed, impossible. After all, the conceptual content is contradictory (absurd) and so the conceptual scope is absolute nothingness.

Proof from the Incongruous.
Given -- Definition of square and circle.
Asked.-- Definition of "square circle".

A.-- ***The fact.***
1. A circle amounts to
a. a surface,
b.1. a radius that is identical everywhere and
b.2. so generates a curve.
This is a collective concept (geometric system).

2. A square amounts to
a. a surface,
b.1. a midpoint, as in the case of the circle,
b.2. but around which four equal lines (sides) forming a closed figure are situated.
Briefly: a square is a rectangle with four equal sides. This is the fact: each separately, both geometric figures are consistent as systems. Conceivable. Possible. Being.

B.-- ***The requested.***
Do we confront - comparative method - both figures to find out if they are interchangeable.
a. As pure surfaces, they are consistent.
b. The contradiction, however, shows itself as soon as one compares the outlines.
(a) The square exhibits only lines where the circle exhibits only a curve.
(b) The square shows rays from its center that are unequal where the circle contains only rays that are equal.

To think square and circle together is absurd for this would entail that the circumferences and radii of both constituents are simultaneously unequal and equal. Which is one application of the axiom of contradiction which reads, "Something cannot be so and not so at the same time." Since the content of "square circle" is incongruent, its extent is zero, the absolute non-thing.

Note.-- Thus, in her way, pain that one has never felt has never penetrated to consciousness: unconscious pain is nothing.

68.
Relation-indicating judgment.

Let's start with a misconception, peculiar to logicians and cognitivists : "In (traditional) syllogistics (*note:* the doctrine concerning reasoning), a reasoning 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. So writes - dares to write - *Drs H.R.Van Ditmarsch*, specialist in "technical cognitive sciences" (University of Groningen), in an article: *Mathematics in Wonderland*, in: *Nature and Technology* 66 (1998): 1 (Jan.), 70.

Already *G. Jacoby, Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, e.g. 53, typifies:
1. Sentences that attribute a proverb to a subject are apt to formulate properties ('classes');
2. relations, however, they cannot articulate logically. Consequence: for mathematics (and logistics) traditional logic falls short.- Behold the fallacy.

Note.--
1. Traditional logic is first and foremost conceptual theory (with an emphasis on distributive and collective concepts: what relations include).
2. On this it rests its doctrine of judgment and reasoning.

Relationships.
"Greater than"/"less than"; "father of"/ son of"; "equal to"; part of". These are terms that fit perfectly into traditional logic.

As an aside, traditional logic works with terms,--not with words, numbers, symbols (a, b or x, y), drawings, diagrams etc. which only acquire logical value as terms. Logicians and cognitive scientists pretty much always forget that.

Relationships are properties.
The relation "greater than" is a property of an elephant insofar as compared, (involved in) e.g. a swan or a mouse. In other words: insofar as situated within a distributive or collective concept.

Syllogistics.
We will return to this further.-- Always, explicitly or not, an axiom, i.e. a generally valid premise, is assumed.

"If X is greater than Y, which is greater than Z, then X is greater than Z". Of these, elephant / swan / mouse are precisely one singular instance.

I.e.: what the common sense (of e.g. Sofie) recognizes, traditional logic formulates more strictly and no mathematician, logistician or cognitive scientist can refute.

69.
The sufficient reason for a judgment.
Axiom concerning reason or ground is "All that is, is for a reason or ground within or without" (justification axiom).

Application: 'If a necessary (partial)/ sufficient (whole) reason or ground, then a judgment partly or wholly justifiable(s)'.

Semiotic reason.
Ch. Morris (1901/1971), in his *Foundation of the Theory of Signs*, Chicago University Press, 1938, is considered the founder of recent semiotics (sign theory)

Reference is made in passing to the significa of Lady Welby, the semiology of F. de Saussure. Not to mention Ch. Peirce, Morris' predecessor, whose entire philosophy can be summarized in an ontological theory of signs.

All of these figures contributed to the emergence of something like a "semiotic turn" the tendency to make signs central.

The language act.
The significi have e.g. a judgment situated within the total framework of human communication and interaction.

Thus, e.g., in response to a statement such as "it's sunny today" they have situated this judgment as an act of language,--:

1. syntactically within a language system in which the judgmental expresses himself,

2. semantically within the surrounding reality to which the judgment refers,

3. pragmatically within the objectives (intended outcomes) that the judge intends to achieve with his judgment.

1.-- *It is sunny today.* This is a well put together (syntax of the terms "today, is, it, sunny") text whose editorial parts are linguistically justified. The sentence is linguistically well put together. This is the syntactic reason for the sentence.

2.-- *It is sunny today.* If "today" is really sunny, fixable, then the sentence is justified as a semantic representation of a piece of reality. This is then the semantic reason.

As an aside, the identity axiom always plays a leading role here, because whether it is actually sunny, today, stands or falls as a statement with the honesty with which one wants to reflect a fact: "What is so, is so". If it is sunny today then it is sunny today!

3.-- *It is sunny today.*
If one who speaks in this way, e.g. tries to take his wife on an outing "because it is sunny today", incorporates the pragmatic reason in his statement which is a proposal.

70.
The sufficient reason for a value judgment.
 Axia', lat.: valor, value.-- 'Axia', in ancient Hellas, was "all that represents such a good (value) that it is, theoretically or practically, presupposed (which one still finds in 'axiom')." 'Axiology', then, is the bringing up of 'good(s)' or value.

Typology.
a. "This child is a treasure" is a value judgment but separate from any (explicit) connection.

b. Joining: "If more than one good, then all"; expressing preference: "If more than one good, then not one and do the other" or still: "If more than one good, then rather this than that"; alternately expressing: "If ..., then now this then that"; refusing: "If ..., then none of them".

Note.- *J. Grooten/ G. Steenbergeh et al, Philosophical lexicon*, Antw./Amsterdam, 1958, 250, defines 'Satanism' as the denial (refusal) of all values as the only value. Which, of course, contains an inner contradiction: the refusal of 'all' values is put first!

Semiotic structure.
Just like in previous chapter.
1.-- *Syntactically.*
"This child is a treasure." The term "treasure" is an axiological term. -- The syntax pays attention to the (proper) concatenation of terms (here: words) which is here grammatically well-formed.

2.-- *Semantic.*
Semantics pays attention to the reality value of a statement. If "this child" is really, i.e. testably, a cute child, then the utterance is semantically, i.e. as a representation of reality, in order. To speak with Platon: the child corresponds to the idea "cute child," where 'idea' is the content of reality,-the object of the utterance insofar as reality is true.

3.-- *Pragmatic.*
Pragmatics pay attention to the intended result when expressing a sentence. For example, "I say this with the intention of highlighting this child's own value."

The sufficient reason.
This is, semiotically speaking, threefold. 'Reason' is all that justifies, justifies. In particular, when a sentence is syntactically, semantically, and preferably pragmatically "in order," that sentence is justified.

Extension.-- Not just a sentence but a text, e.g., a whole theory, is "in order" insofar as it is triples "in order." Immediately we have a science theory "in a nutshell".

71.
The conditional judgment.
Bibl. sample: *D. Mercier, Logique*, Louvain / Paris, 1922-7,-153ss.

The implication.
The implication shows itself in the "if, then sentences". Indeed, "It is inherent in raining and walking in the rain that one gets wet because raining and walking in the rain implies getting wet". Well, logic in its third part is the study of entailment or implication.

1. The categorical wording.
"I satisfy myself." A judgment that is condition-free.

2. The hypothetical or conditional wording.
"If (and only if) the girl comes, I content myself". Or shorter, supported by the context: "In that case, I content myself". Or hidden: "She, the café owner, is content with the girl coming".

Conjunctive and disjunctive judgments.
1. Conjuctive judgments.
"A man is not at the same time conscientious and cynical". Can be rewritten: "A human being, if he/she is conscientious, is not cynical". Or vice versa.

Note- There is inconsistency between being conscientious and being cynical. Cf. contra-diction axiom.

2. Disjunctive judgments.
"Thou canst not be at thy post and not at thy post at the same time. Either thou art at thy post, and then thou art inattentive as a soldier on guard. Either thou wast not at thy post, but then thou wast at fault". Rewrite: "If ye were at your post, then ye were inattentive. If ye were not at your post, then ye were at fault". - Or still: "One of you will hand me your money." -- rewrite: "If not one, then the other will hand over his money".

Conditional judgments.
We are near the door of reasoning theory. There - in classical logic - everything comes down to conditional judgments.

Hidden conditional judgments.
The causative clause.-- "Because I am the daughter of my mother, I inherit from my grandmother". Or: I, as the daughter of my mother (reduplicative clause at 'I') or "If I am the daughter of my mother, then ...

The reasoning sentence.-- "Because my mother was provided for in her grandmother's inheritance, I inherit. "If my mother had been provided for in her grandmother's inheritance, then..."

72.
Reasoning Theory.
Dwell on the two basic patterns of reasoning.

1.-- *The immediate derivation.*
***Example*.**-- "I think. So I am". (This is one of the most famous judgments of R. Descartes who concludes from the conscious inner life to the fact of being).-- An immediate derivation starts from the given, the prepositional phrase, which is presupposed as directly known. The derivative sentence is sensed as derivatively obvious. So that the "if, then"-structure is effortlessly realized. The reasoning involves only two sentences.

2.-- *The indirect derivation (syllogism).*
Beginning with the basic pattern. **1.** All that thinks is. **2.** Well, I think. **3.** So I am". Where is the difference with the immediate derivation? That difference lies in the fact that the premise of the twofold immediate derivation comes first. And thus makes a complete reasoning of the incomplete immediate reasoning.

Note.- *I.M. Bochenski, Philosophical methods in modern science*, Utr. /Antw., 1961,91.-- The author formulates the structure of the mean derivation in learned fashion.

Derivation Rule.
"Does one have in a system (*note:* here the whole of the text of the concluding statement or syllogism)

1.-- *A conditional statement...*
"If a, then b" (*note:* the sufficient reason see above "All that thinks, is". Rewritable in " If one thinks, then one is"), where A represents a prepositional phrase and B a subsequent postpositional phrase.

2.   -- *Is a statement similar to.*
its prefix A (deduction) or its postfix B (reduction), then in that system one may introduce a statement that is similar to the postfix B (deduction) or to the prefix A (reduction)."
Platon.-- He knew two main types of reasoning that correspond to Bochensky's.

1.-- *Sunthesis (deduction)*
If A, then B. Well, A. So B.-As above (If one thinks, then one is; well, I think; therefore I am").
2.-- *Analusis (reduction).*
If A, then B. Well, B. So A.-- So e.g. "If one thinks, then one is. Well, I am. So I think".

Note- It is thus seen that the conclusion applies only to some beings.

73.
Immediate derivations: summative and mathematical induction.
1.-- The "full" (summative) induction.

A teacher has improved all (= summa: sum) work after one. This is run over again with the logical conclusion: "I have improved all of them"! -- From all separately one concludes to all together. Summarizing induction, not 'extrapolating' or extending knowledge. Purely summarizing.

Learned wording.

If e1, e2, e3 ....e (total) are the elements of a set, and that is, of all its elements (the 'summa'; in Latin); and if the cognate k (so e.g. "I have improved") is a property of each element separately, then k is a property of all elements taken together."

Note.- I.M. Bochenski, Philosophical Methods in Modern Science, Utr./ Antw., 1961, 146: "This is not induction (*note:* generalization) in the proper sense but a kind of deduction. Indeed, in mathematical logic (logistics) there is a law by virtue of which this rule can be infallibly established.-- incidentally, its application is often useful (...).

Two comments.
1. The notion of a 'set', the final element in one interpretation of the entire current - 'modern' - mathematics, can only be founded in this way, at least at the beginning of the axiomatics of set theory.

2. Bochenski understands "actual induction" to be the scientifically extremely employed "amplificational" ("information-expanding") induction that decides from a portion of the specimens (the tested cases) to the sum or totality of the specimens (the testable cases).

2.-- The mathematical (mathematical) induction.

This one is one application of the previous one.-- Behold.-- Rule.-- If k is a characteristic of any number (any number) and immediately of its successor (usually indicated by "number +" or "number + 1,-we think of G. Peano's theory of numbers) within the sequence of numbers and -application - this characteristic k is in fact a property of e.g. the number 1 (as an arbitrary copy), then k is a characteristic of each number separately and of all numbers together.

Note.- Bochenski, o.c., 146: "Such inductions are very common in mathematics.

However, it is clear that we are dealing here rather with a real deduction".

74.
Immediate distraction from an opposing judgment.
Bibl. sample: -- *F.C. Bartlett, Exercises in Logic*, London, 1913, 51ff. (*Immediate Inferences*). -- *Ch. Lahr, Logique*, 511 / 513 (*L' opposition*).

The basics.-- The logical square.

All girls are beautiful (all: model). **(a)**	**(a)** contrair **(e)** (a) and (e) are counterfactual	All girls are not beautiful (all not (no: counter model)). **(e)**
	Vertical: (a) - (i) and (e) - (o) are subaltern.	
	Diagonal: (a) - (o) and (i) - (e) are contradictory	
Not all girls are beautiful (some are). **(i)**	**(i)** subcontrair (o) (i) and (o) are subcontrasting.	Not all girls are not beautiful (some are not). **(o)**

Example. Given.-- All people who do not think are superstitious .
Asked.-- What do you immediately infer about people who do think?
1.-- Two judgments are opposed if, although they have the same subject and the same saying, they differ with respect to quantity or quality.
2.-- To infer immediately from the affirmation or denial of a given judgment the affirmation or denial of the contrary judgment is to infer contrary.

Typology of opposites.
Within the logical square show couple : "contrair / subcontrair", "subaltern /subaltern", "contradictory/ contradictory". Thus: if two propositions differ and under consideration of quantity (all/some do/some not/ none) and under consideration of quality (model/ counter model), then they are contradictory. Thus the sentences A and O or E and I.-- Subaltern are those sentences which differ only as to quantity. Thus A and I and E and O.

Insinuating figure of speech.
In rationalist middle, one can easily hear the judgment "All people who do not think are superstitious", understand : "who do not think rationalistically".
In other words: one confuses the universal concept of thinking with the private concept of rationalistic thinking. One insinuates that only thinking people are not superstitious.-- Which is far from proven.-- One lapses into the unsaid: one does not say that thinking people are not superstitious, but insinuates it. And this is done on the basis of an immediate deduction.
Criticism.-- The immediate derivation of an opposing judgment is the stylistic means of insinuating, engaging.

75.

Immediate conversion from an inverted judgment.

Bibl. sample: *Ch. Lahr, Logique*, 513s. (*La conversion*).

Given.-- The exchange or "conversion" within the same judgment: the subject becomes the proverb and vice versa.

Requested.-- Calculating with the quantities (collection/system) and with the qualities (confirmation (model)/disconfirmation (counter model)) within the judgments perform conversions.

Main Rule.

1. If one does.

from - platonically expressed - all (universal set) may derive some (= again platonically expressed: private set), then this does not imply that from some one may derive all.

Note.-- This does not preclude one from doing so hypothetically in the inductive method. Hypothetically', after all, implies reservations including further tests to be carried out.

Example.-- Experiential science regularly proceeds like this. If this water (sample) and that water (sample) boil over and over again at 1000 C., then one may -- expanding knowledge (amplifying, as it is called) until further notice presuppose that all water boils at 100° C.. In other words: from some one generalizes to all!

2. If one does.

If, according to -- platonically expressed -- the whole (system) may decide on part(s) within the whole, one may not decide on the inverse of part(s) to withdraw from the whole. Unless by virtue of those parts which are decisive for (the definition of) that whole.

Note -- Whoever walks on a small market and overlooks it completely, yes, sees through it (cognitively) - which does not happen very often even on this small scale in view of the enormous complexity of all the systems - may conclude from that whole to portions which are present everywhere on the market.

But conversely, to 'characterize' the entire market on the basis of aspects (parts) of the market in question - unless (what is called in the tradition) a potiori, i.e. limiting oneself to one or a few omnipresent characteristics - is, without a doubt, logically speaking, hypothetical.

Until further notice.

including further tests, i.e., with reservations, such reasoning is logically sound.

Note.-- This double aspect (distributive and collective) worked out as above seems to us to be the only thing of real interest concerning 'exchanged' judgments. The rest seems to us to be pastimes for shrewd minds.

76.
Immediate derivations: analogical induction.
The mean mind.
Master tells about the solar system (including the planets. Johnny: "Master, if Earth and Mars are both planets, would Mars (original asking for information) also have an atmosphere with life, just like our Earth (model)?". Short: Johnny reasons from model, available information, to original.

Reasoning structure.
Bibl. sample: *Ch. Lahr, Logique*, 608/611 (*L'analogy*). -- Comparative method.

Given.
Earth and Mars, among others, belong to one and the same collection by virtue of a minimal number of common characteristics (round shape, rotation of the axis, orbit around the sun).

Requested.
Well, the Earth exhibits an atmosphere with living things. So would Mars also have an atmosphere - perhaps its own - with life? (hypothesis).

Gradation.
Johnny reasons from established resemblance to ascertainable resemblance. From some degree of similarity to a greater degree of similarity. The sufficient (at least hypothetical) reason for Johnny move is the already known similarity.

The concept of comparative sciences.
What is called "comparatism", i.e. the tendency to compare scientifically, ranges from comparative physics to e.g. comparative religious science. Not to mention comparative cultural science.

Attention.
When one compares, variants show.
a. The one emphasizing parable (concordism).
b. The others difference (differentists).
Our position on this: identitarian logic that wants to see both difference and similarity.

Note.-- Physics.-- J. Priestley (1733/1804) generalized from rust and combustion, as both 'oxidations' (oxygen processes), which degrade something, to: "Would that all other oxidations were therefore also degrading. -- Analogously, "Light, ultraviolet rays, heat are vibrations: would all be governed by the same laws of nature?"

G. Saint-Hilaire (1772/1844; embryologist) was the first to note the similarity (in role) of arm (man), leg (quadruped), fin (fish). Following G. Cuvier (1769/1832), founder of palaeontology, Saint-Hilaire founded comparative anatomy.

77.
Immediate derivations: a-fortiori reasoning.
The common sense.-- "One would jump out of one's skin for less" (understood: "Already for less injustice one becomes angry"). Or also: "Already there is nothing left. Let alone that ..."

Measurement.
Whether we are talking about even mathematically exact data or about purely qualitative data: a data is amenable to some kind of measurement. So e.g.: an election success (in numbers) or an outrage (hardly, rather, strongly, extremely outraged).

Gradation.
Precisely a less or more concerning sufficient reason structures the "de des-te" (more or less), i.e. afortiori reasoning.

Bibl. sample: A. Lalande, *Vocabulaire technique et critique de la philosophie*, Paris, 1968, 32.-- Two types.

1.-- From one judgment to another.
Namely. such that in addition to the reasons justifying the first, other reasons apply to the second.-- "already ..., all the more so".

Appl. model.
"As an inconstant, I already loved you. Now that I have become steadfast(er), I love you all the more firmly".

Note -- **1**. Two sentences that articulate a statement of fact.
2. This immediate derivation stands or falls on a general axiom, viz. "already ..., the more so" of which the two sentences provide an application. What the syllogism structure suggests.

2.--From a quantity expressed in a sentence....
to another quantity expressed in a different sense.-- For example, in *Cicero, Pro Milone*: the (sufficient) reasons justifying violence as "lawful self-defense" are expressed thus "if one may already kill a thief (*note:* as lesser evil), then all the more a murderer (as Milo)."
The reason for the gradation is: a murderer is, socially or ethically speaking, a worse evil than a common thief.

Note.-- Two "quantities. With degree difference. Such that the first cannot be reached or exceeded without immediately -- logically -- the second also being reached or exceeded.-- According to Lalande, this is the application of an underlying general axiom. Which in turn highlights the syllogism structure -- about which we will now proceed immediately. - It is through the depth structure of the immediate derivation that the syllogism itself is exposed as a mediate derivation.

78.

A syllogism (capstone) involves three concepts.

"Terminus esto triplex" said the scholastics. At least three but also no more than three.-- Chain reasoning illustrates this.

A.-- *Polysylogism.*

"Poly (= many) + syllogism"-- What is not composed of elements that can exist independently never disintegrates as a whole. Well, the pure incorporeal soul of man is not composed of elements that can exist independently. So the pure incorporeal soul of man as a whole never disintegrates. Now all that never disintegrates as a whole is immortal. So the pure incorporeal soul of man is immortal.

Note.-- Here are more than three terms: thus there are more than one syllogism.

B.-- *Accumulation (sorites).*

'Sorites' (ancient Greek) is 'accumulation'. There are two types of this concerning syllogisms.

B.1. -- *Backward (regressive) accumulation.*

Montaigne (1533/1592), famous for his *Essais* (1580), puts in the fox's mouth, "This river fizzes. What fizzes, moves. What moves is not frozen solid. What is not frozen solid cannot carry me. So this river cannot carry me".

Note.-- The 'So's are omitted.-- Such reasoning is a series of judgments such that:
1. the predicate of the preceding becomes the subject of the following,
2. until the final judgment of the first subject pronounces the final sentence.

B.2.-- *Forward (progressive) accumulation.*

"Athens controls Greece. I control Athens. My wife controls me. My ten-year-old son controls my wife. So this child controls Greece".

Note.-- A series of judgments so that:
1. the subject of the preceding becomes the predicate of the following,
2. until the last judgment of the last subject pronounces the first saying.

Note.-- Themistokles Of Athens (-525/-454), statesman and strategist, is known for these sorites. It is a sophism (deliberately committed fallacy). The term "master" viz. has been misused in more than one sense.

But Themistokles uses this as a figure of speech in the form of a syllogism: he wanted to denounce his wife! At once he is flaunting his logical abilities! This was a perfect match for the "smooth" personality of this ancient Greek.-- Immediately we have a piece of "deconstructive" logic that specializes in the breakdown of false reasoning.

79.
19 of 256 types of syllogisms are valid.

Any normal syllogism thus includes three terms which are compared in pairs - always the comparative method - viz. the major term ('maior') by virtue of it having the largest size - "all water" e.g. -, the minor term ('minor') - "this water" e.g. - and the middle term ('medius') - "boiling at 100° C." e.g.. -- "All water boils at 100° C ... Well this is water. So this water this water boils at 100° C".

Combinatorics.
Bibl. sample: Ch. Lahr, Logique, 519/528. One can "experiment" with syllogisms. Reduced to the main, this gives what follows.

A.1.-- *Four figures ('schemata').*
The middle term can occupy four places. 'Sub' = 'subiectum' (subject). 'Prae' = 'praedicatum' (saying).

a.-- Subject in the major and predicate in the minor (sub / prae).
b.-- Saying in the major and predicate in the minor (prae / prae).
c.-- Subject in the major and predicate in the minor (sub/sub).
d.-- Proverb in the major and predicate in the minor (prae / sub).

Note.-- J. Lachelier (1832/1918), Kantian thinker, known for his *Du fondement de l'induction* (On the foundation of induction), (1872), distinguishes the syllogisms in

a and **b**.-- aprioric, i.e. going from the general to the private or singular (sub / prae and prae / prae);
c.-- aposterior, i.e. going from the singular or private to the universal (sub / sub);
d.-- invalid (prae / sub).

A.2.-- *Sixty-four modes of utterance ("modes").*
From the subject, the predicate is plotted according to quantity (size v/h subject) and quality (nature of the predicate: model / intermediate model / counter model). With full combinatorics of possible judgments, this gives 64 assignments of the saying to the subject.

B.-- *Two hundred and fifty-six forms.*
4 x 64 = 256.

B.1.-- *Only 19 forms are valid.*
These bear names like Barbara, Celarent, Darii, Ferio,-- Baroco,-- Bocardo. This since the Latin-speaking middle ages.

B.2.-- *Only five or six are used.*
Thus Lahr, o.c., 520. -- All this is fodder for combinatorics. We waste no time in explaining all this.

80.
Deduction ('sunthesis') and reduction ('analusis').

We already saw it just before: Lachelier distinguishes between 'aprioric' (deductive) and 'aposterioric' (reductive). In Platonic terms: 'sunthesis' and 'analusis'.

1.- *Deduction.*

"If a (prepositional phrase, VZ), then B (postpositional phrase, NZ).- Well, A, therefore B". In hypothetical language: "If A, then B and if A, then B".

Applicable model.

If all water boils at 100° C., then this water and that water (samples).-- Well, all water boils at 100° C . So this water and that water (samples) boil at 100° C .

Sufficient reason.

If there is sufficient reason, there is deduction. -- Here: one reasons from all waters (universal collection) to some (this and that) waters (private collection). Modally speaking, the derivation is necessary and thus deductive, aprioric. 'All' is the sufficient reason of 'some' (or even "just one"), because some is a part, subset, of all.

2.- *Reduction.*

"If A, then B -- well, B, So A". In hypothetical language: "If A, then B and if B, then A"

Applicable model.

If all water boils at 100° C., then this water and that water (samples). -- Well, this water and that water (specimens, samples) boil at 100° C ... So all water boils at 100° C.

Insufficient reason.

This is also called "amplificative" (knowledge or information expanding) induction or generalization, because the information about the boiling point of water that one acquires through two samples, one extends (extrapolates) to all possible water.

Well, if one has not tested all water by means of samples, one cannot be sure that all water boils at 100° C.. We reason from a subset to a universal set. A subset is an insufficient reason of the universal set as long as one leaves the rest untested. The derivation is non-necessary, possible. Nothing more. And thus reductive.

Note.-- One sees that the modalities are the sign by which one can tell the difference between deduction which is necessary, and reduction which is not.

81.

Universal and statistical induction.

Let us take an example. Is in circulation a list of men who were baptized and brought up catholic and held high political office as extreme rightists: Hitler (Germany), Mussolini (Italy), Franco (Spain), Salazar (Portugal), Pétain (France), Pilsoedski (Poland), Horthy (Hungary), Dollfusz (Austria), Schussnigg (Austria), Tiso (Slovakia), Degrelle (Belgium), Pavelich (Croatia).-- What evidential value do these samples have in a Catholic and right-wing world?

Types.

There are many types of induction. Two interest us here.

1.-- Universal induction.

If the percent is either 0 (none) or 100 (all), then one speaks of universal induction.

2.-- Statistical induction.

If the percent differs from 0 and 100 then there is statistical induction.

Syllogism.

Bibl. sample: *W. Salmon, Logic*, Englewood Cliffs (N.J.), 1963, 55f.. -- X % of the copies of a set exhibit the property E. Well, e is one copy of it. So e exhibits X % probability of exhibiting the property E.

Appl. model.-- These beans come from this bag. Well, these beans are 75% white. So -- generalizing (amplificative ind.) the rest of the beans will also be 75% white.

Samples.

Induction as a generalization stands or falls with sampling. Think of opinion polls: on 1,000 interviewees one expands to e.g. 6,000,000 Flemings.

1. -- Quantitative.

The larger the number of samples the more approximate the generalization. If one tests only two beans from "this bag" for their color, the base is very narrow!

2.-- Qualitative.

The more haphazard ("at random": randomization) the samples the more "real" (objective) they are.-- One can suggest the answer in a poll by the way of asking questions. Primitives talk ethnologists into their mouths.

Now what is the evidential value of our initial example?

1. One might as well look up a list of Catholic baptized and raised who thought democratically and held high office. That would make the induction more approximate.

2. Remains that in the same period so many Catholic-baptized-and-raised as the far right made it this far.

82.
Two types of reduction (and therefore of deduction).
Bibl. sample: *Ch. Peirce, Deduction, Induction and Hypothesis*, in: *Popular Science Monthly* 1878, 13, 470/482. In it Peirce gives a configuration of three syllogisms that make clear similarity and difference between - what we call - 'generalization' and 'generalization'. In his language 'induction' and 'hypothesis' (also: abduction).

Note.-- *A.D. de Groot, Methodolgy*, 's Gravenhage, 1961, 30, uses 'induction' also for 'hypothesis'.

1.-- *Deduction.*
Rule (R): All the beans from this bag are white. Application (Well,) These beans come from this bag: (So) these beans are white.

Note.-- The rule (Rule) and the application (Appl.) are the phenomenological given (G). The logically demanded is -- what the pragmatist Peirce, in his American way -- called "result" (Res) (instead of "conclusion") -- .

2. -- *Reduction types.*
What he does not distinguish in deduction, Peirce does distinguish in reduction.

2.1.-- *Generalization.*
This is the distributive reduction. Appl. : These beans (as separate ex.) come from this bag. Rule.: (Well,) these beans (taken separately) are white. Res.: (So) all the beans (as separate samples) from this bag are white.

Note.-- The phenomenological Given here are the (deductive) application and result (conclusion). The logical demanded is the deductive rule.-- Immediately it is clear that the deduction portrays itself in the generalization: it is, as it were, the ideal of the generalization.

2.2.—*Generalization ('Whole-ization').*
This is the collective (compact) reduction.
Rule. : All beans (taken collectively) from this bag are white.
Res. : (Well,) These beans (taken collectively) are white.
Appl. : (So) these beans (taken collectively) come from this bag.

Note.-- The phenomenological Given are now the deductive rule and result. The logical Given is the deductive application.--

Again, then, deduction reflects itself in this form of reduction but differently, namely, as collective deduction.
So that Peirce could actually have introduced a second deduction type
Rule. All beans (taken collectively) from this bag are white.
Appl. : (Well,) These beans (taken collectively or compactly) come from this bag.
Res. : (So) these beans (taken collectively) are white.
In other words: there is distributive and collective deduction.

83.
Once again, the collective syllogism.
Bibl. sample: D. Mercier, *Logique*, Louvain/Paris, 1922-7, 177/185 (*Nature et fondement du syllogisme*).

We repeat the scheme: "If A (prephrase) then B (postphrase).-- Well, A. So B". But based on consistency.

Geometric model.
phrase 1.-- All triangles that exhibit two equal sides necessarily also exhibit two equal angles.
phrase 2.-- Well now, this triangle here and you, ABC, exhibits two equal sides.
postphrase.-- So ABC immediately exhibits two equal angles.
Geometricians give us the proof. That does not interest us here now. What does interest us is what follows.

1. -- Deduction.
Not only is there a coherence between "all" (triangles) and "this (triangle) here and now" (ABC) such that from rule to rule one reasons with necessity (the universal includes the singular or private). There is also another connection: as soon as a triangle with two equal sides is put forward as a subject, one is compelled to say that it has two equal angles in the saying. Or, if one wishes, "Two equal sides within a triangle involve ('imply') with necessity two equal angles".

2.-- Metonymic model.
Let us consider the second type of connection. Two equal sides - the original - are represented by two equal angles - the model. Not because the angles resemble the sides (metaphorical model) but because they are related to them, they provide information (truth) about the equal sides and so they have model value. Metonymic model value then. So that they can function in a saying about sides.

Ontological comment.
Mercier, as an ontological logician, notes that, whether the triangle is merely imagined or materialized (in wood, ink on paper, chalk on board),--whatever the length of the sides and the width of the angles,--where and when the sides and the angles are situated, the connection "sides/angles" is everywhere and always there. Unchanged. "Eternal. This follows from the connection "all/ these".

When Aristotelians establish such an ever-present state of affairs, they consider it the result of our abstract mind. In that abstract, Platonists see an image of an idea (ideation).

84.
Proof from the absurd (*"ex absurdo"*).
Bibl. sample: *D. Nauta, Logic and* model, Bussum, 1970, 27(280).

Prepositioning: either model or counter model. In no case: intermediate model.--
1. The model, at least for now, is not directly provable.
2. One commits the path of a detour. For one asserts a counter-model which answers to the given but not to the asked. For, if the counter-model is asserted, it follows logically what refutes that counter-model.

A lame definition.
Bibl. st: *W. Salmon, Logic*, Englewood Cliffs (N.J.), 1963, 30.-- The socratic-platonic method placed a main emphasis on defining. Preferably in the context of a dialogue. Preferably ethical values, where 'justice' (conscience) was central.

Kefalos' definition.
"What exactly is justice? Kefalos: "To tell the truth and to return what is owed."
Socrates: "Is that definition correct (*note:* universally valid)?

Note.-- Here is a Socrates speaking applying eristics. Eristics pays attention to the weaknesses. With K. Popper one could speak of 'falsification' and with J. Derrida of 'déconstruction' (reduction of questionable claims).

Socrates.
"Supposedly: a friend in his right mind entrusts me with weapons that he asks for back when he is no longer in his right mind. Is it 'righteous' (*op.: justified* in conscience) to give them back to him then? No one will insist that I must return them (...)

Note.-- Telling the truth is conscientious in all cases. But giving back, is not conscientious in all cases. Well, a definition only gives what is true in all cases.

A sophist definition.
The Sophists were between -450 and -350 intellectuals in Hellas who defined the virtuous man as the expert man. The human being who possesses 'technè: lat.: ars, skill.

From which Socrates deduced:
"A thief is an expert concerning the taking away of goods. As such, the thief is a human being who possesses 'technè', 'a skill. Socrates insinuates, "Where, then, is justice (i.e., conscientiousness)?" A person can be both skilled and unscrupulous! For the ethical direction of Socrates and Platon it was true: expertise and righteousness only found a liveable and above all predictable society!

85.
Dilemmatic syllogism.

Bibl. sample: W. Salmon, Logic, Englewood Cliffs (N.J.), 1963, 32/34 (*The dilemma*).-- The author cites two types of dilemma.

1.-- *One same postphrase.*
"Either p or -p" (= model and counter-mod.). If p, then r. If -p, then also r".

Appl. model.-- A sentry fails to sound the alarm: "Either thou wast at thy post or thou wast not. If so, thou hast not done thy duty. If not, then thou hast not done thy duty either".

2.—*Dual postphrase*
"Either p or q. If p, then r. If q, then a".

Appl. model.
A person appears before a judge accused of a minor traffic offense for which he is not at fault -- "Either I plead guilty, but then I am sentenced to a sum of money for a 'mistake' I did not commit. Either I plead not guilty, but then I have to spend the whole of the following day in prison".

Note.-- One does not think that the dilemma does not play a significant role.- *H. Arendt* (1906/1975), in *The Human Condition*: K. Marx defines man as "animal laborans," a living being that works, while in "the realm of communist freedom (the future state) he excludes all labor. Either productive slavery-labor or non-productive laborless freedom". - Now who is the real Marx on such a main point?

Definition.
Dilemma demands at least two possibilities but no more. Same with a trilemma (three possibilities).

Appl. model.
Bibl. sample: Ch. Lahr, Logique, 528.-- Epikouros of Samos (-341/ -271), founder of Epicureanism, is known for a so-called dilemma.

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

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

In both cases, the soul need not fear death. (One sees: the first type with one same afterthought).

To which Lahr,-- There is a third possibility, viz. the soul survives death but in such a way that, for reasons of unscrupulous deeds, it is subject to remorse or at least regret. Epikouros would have to prove that there are only two possibilities. Which would establish a real dilemma.

86.

Lemmatic-analytic reasoning.

O. Willmann", *Geschichte des Idealismus, III* (*Der Idealismus der Neuzeit*), Braunschweig, 1907-2, 48: "One of the most fruitful methods of modern mathematics, the analytic principle, is of antique and specifically Platonic origin: Platon is reported to have been the first to offer research by means of 'analusis' to the Thasian Leodamas". - Thus Diogones Laërtios 3:4.

Structure.

It is a form of reduction whose structure reads, "If A, then B. Well, B. So A". Where 'A' is the wanted (GV).

The 'lemma'

Since 'A' is and remains unknown for the time being, one introduces a model - a hypothetical model: "If X, then B. Well, B. So X (= A)". -- In other words: the requested (GV) is unknown. But one pretends that it was known and therefore given (GG). In doing so, one introduces a provisional designation of that as if given: e.g., 'X'.

Note.-- 'Lemma: also "prolepsis," lat. anticipatio, prevision, in ancient Greek meant, among other things, "given to develop" (so in rhetoric).

Note.-- Model Theoretically: Of A, X is the model (of A as original), because X provides, possibly, information regarding A. 'Possibly' because it is and remains a hypothetical model.

Note.-- Since one looks up A via X, the analytic method, like the proof from the incongruent, is a roundabout reasoning.

The analysis.

Note: usually one does not say "lemmatic-analytic method" but simply "analytic method": although it is a variant of the "analusis", the reduction.

The analysis tests the lemma, X, by situating it in reality (which includes the Given (the initial data)). It is tested for its relations - similarities, coherences.

Appl. models.

Thus in the rule of three.-- From 75 e.g. one looks for 15%, which is the X (Asked).-- The analysis situates that X (15%) within a known structure, viz. 100% (universal) / 1% (singular) / 15% (private. 75 through 1/75 and so on to 15. 1/75.

A far-reaching application is mentioned at E.L. 27, where one sees how Viète calculates with lemmas (letters) instead of numbers. And thus founds the mathematical "analysis" that proved so primal.-- In engineering, the "black-box method" is another model of lemma.

87.

The pragmatic maxim (Ch.S.S. Peirce).

Ch. Peirce (1839/1914), in his *How to Make Our Ideas Clear*, in: *Popular Science Monthly* 12 (1878): 286/302, formulates his "pragmatic maxim" --

1. Our mind pays attention to an object, a given.

2. He pays attention to what practical effects that object might have. Well, all that we "effectively" know about that object is present in those practical effects.

Peirce is firmly opposed to a skeptical or materialistic interpretation of the maxim: "In fact, it is merely the application of the one principle of logic that Jesus recommended: 'By their fruits (*note :* results, effects) you will know them'. Immediately the maxim is closely related to the conceptions of the Gospel." (*R. Berlinger, Hrsg. / Kl. Oehler, Uebers., Ch.S.S. Peirce, Ueber die Klarheit unserer Gedanken*, Frankf.a.M., 1968, 62f.).

The world in the making.

Peirce reproaches traditional thinkers for paying too much attention to the origin of our concepts. Let us rather think of the future: what will be the effect of our ideas if we live according to them,--if we test them, for example, by trial and error? That is important. In 1905 he writes: "If a certain prescription for an experiment (*note:* in which our concepts are applied) is possible, then (*note:* if the experiment goes ahead) a well-defined experience will follow." It is that experience that shows true understanding.

Not without reason, *J. Dewey* (1859 / 1952), thinking somewhat along Peirce's lines, would say that "*the world in the making*" is central to Peirce's pragmatic thinking that has nothing to do with "low and dirty thinking."

Lemmatic-analytical.

It is immediately clear that our notions, before we introduce them into life (e.g., in education; e.g., in laboratories where they are experimented with), are only hypothetical models, lemmas, therefore, of the future original that emerges from praxis.

In other words: what Platon calls 'analysis' is here the practical application of concepts,--which only through practice reveal their true meaning - definition.

Not surprisingly, American Pragmatism ...resonated with European Existentialism and Marxism, which also put life at the center rather than inanimate concepts.

88.
A school paradigm of lemmatic-analytic reasoning.

Given.-- Children, led by Miss Anita, are in the forest. A girl comes running up to before the teacher: "Look, miss, a feather"

Asked. -- "Guess what bird that feather belongs to" says the teacher. The unidentified bird is the lemma.

Analysis. A girl says "That's from the black blackbird". To which a vein girl says "No! The plume is not black enough for that. It is from a thrush".

Note.-- The plume is like a many-sided sign! The whole in which it fits is not so immediately apparent (generalization).

Names. No one knows at that time which bird the feather belongs to. The names are the provisional designations of the lemmas. (Blackbird, Thrush). Like the x in "x = 12 a" (where a is 7).

Note.-- A lemma can be haphazard. But in many cases there is a reason to advance the lemma: some children's knowledge of birds makes them aim for reasons (even if they are insufficient reasons).

Analysis. The situation changes: the class is at home. At school, Miss Anita takes out her bird books. Full of color pictures. **1.** First she shows the black blackbird: "The plume is too brown, miss" everyone exclaims.**2** . So I looked elsewhere. She shows the thrush. "That's much better. **3.** The lady puts it to the test: she shows the female blackbird, which is less black than the male blackbird. "It could also be from one of those female blackbirds, Miss".

Conclusion.
The plume is either of a thrush or of a female blackbird.-- In other words, o.g., the GG makes the whole ("the 'system'" the scholars say) into which the plume (a sample actually) fits, undecidable.

Note. - At once we understand in a nutshell what the ancients called dialectics. Zenon of Elea (-500/ ...), a student of Parmenides with an eristic disposition, i.e. intent on discovering the flaws in reasoning, said: "Neither you prove what you claim, nor do I. Those who defend the thrush and those who advocate the female chickadee do not really prove what they defend. Those who defend the thrush and those who advocate the female thrush do not really prove what they defend.

When the pros and cons weigh against each other, Aristotle calls such a situation 'dialectical'. Who is right is undecidable until new data emerges. - Today's world views - so it seems - are in such a dialectical situation.

89.
Dialogic induction.

What does one do in a society where opinions (philosophies of life) rely on mere reasoning (and not authority)? Socratic induction teaches us.

1.-- *Define.*

Socrates addressed the ethical virtues: he was the first to attempt to formulate general definitions for them.-- That, according to Aristotle, is the first part of Socratic.

2.-- *Induction.*

Arriving at derivations by reasoning in the form of induction, understood as generalization.-- This is the second aspect.

Situation.

The sophists - experts in politics and eloquence, but also in agriculture and shipbuilding e.g. - governed (-450/-350), without too much conscience ("justice"), more and more life, e.g. the education of youth and the management of the city-state. This is where Socrates and Platon come in.

Dialogic induction.

Dialogue as a method of reasoning is rooted in the democratic tradition.

1. In the agora, the public assembly in Athens (direct democracy), in principle everyone who was a citizen had a say: to present their own opinion, with arguments.

2. This is reflected in the *Historiai* of *Herodotos of Halikarnassos* (-484/-425): others get to speak before Herodotos expresses his own opinion.

Globalisation ('Whole-ization')

Socrates defines, induces (generalizes) but does so while discussing, while dialoguing.

Induction can generalize (distributive concept) but can also generalize (collective concept).

So *Platon* in his *State*.-- He wants to arrive, socratically, at a definition of "dikaiosunè," conscientious behavior. What does he do? He first allows others, some of whom differ sharply from his view, to speak. Thus: Kefalos (trade environment), Polemarchos (circle of friends), Trasumachos (cynicism), Glaukon (compromise mentality), Adeimantos (opportunism) each define from their own perspective, from their own sample, what justice, conscientious behavior is.

Thus, one obtains a more comprehensive view of the whole, viz. through the partial insights. This is how Socrates and Platon avoided one-sidedness.

90.
Authority argument.

'Authority' is multiple: there is, e.g., charismatic but also scientific authority. Authority concerns problem solving: those who solve problems acquire authority.

Bibl. sample: W. *Salmon, Logic*, Englewood Cliffs (N.J.), 1963, 63/67 (*Argument from authority*).

1.-- *Deductive*.-- X is an expert and therefore when he/she judges, a reliable authority. Well, X asserts p. So p is reliable.-- 'Orthodox' (= straightforward (do not confuse with 'sincere')) thinkers such as authoritarians reason this way. They think axiomatically, -- 'dogmatically'.

2.-- *Reductive.*
If the vast majority/a majority/a sufficient number of judgments of X regarding a domain are true, then X possesses very great/a great/a some authority.

Well, the vast majority/a majority/a sufficient number of statements of X regarding a domain are found (inductive sampling) to be true. So.

Definition.
From both reasonings, it emerges that authority is like a concept: it has a content that refers to a scope (domain).

In other words, what is outside the understanding of a domain is outside the authority. "Worüber man nicht reden kann, darüber soll man schweigen"!

The Authority of A. Einstein.
A. Einstein (1879/1955) elaborated a universe theory (cosmology) called the 'theory of relativity'. In microphysical and astronomical terms, all judgments are situated within 'time space'. The actual material world knows no absolute time or space, -- independent of cosmic conditions. So that our physical judgments are relative.

Values and cultural relativism.
Some deduced from Einstein's theory that even our traditional value judgments are non-absolute, relative (depending on situations).
a. Synchronicity: we live on a planet with a multitude ("multiculture").
b. Diachronic: each of these cultures evolves in the course of its history. So that our value judgments turn out to be relative. People who experience such differences, yes, disputes, "relativize" values.

Criticism.
1. Einstein's theory is strictly natural science and his authority is limited to that domain (of which he has "understanding").
2. A relativistic theory of culture, however, is strictly human science. One does not confuse material nature with humanity!

91.
Areas of authority.
Value-free science.
Bibl. sample: *G. Del Vecchio, Droit et économie*, in : *Bulletin européen* 1962: janv./ févr. 10/12.

L. Einaudi (1894/1961) economist argues that his professional science is a partial and therefore hypothetical (caveat) science.

1.-- *'Freedom of Values'*
This does not mean that a professional science does not accept values. It does mean that it recognizes only those values, which are valid within its field: for example, economics recognizes economic values (market, capital, labor, goods, services ...). As an economist, the economist is "homo oeconomicus" a person who limits himself to economic values.

2. -- *Ethics.*
Einaudi: "The economist as a professional does not say, 'You should ethically act in such or such a way'. In that case he would go beyond his domain and into an area in which he is not an expert. He would be doing ethics. -- He does say: "If you act ethically in such or such a way, then, in view of economic laws, your ethical action will have such or such economic consequences".

Note.-- G. Galilei (1564/1642) with Copernicus, Tycho Brahe and Kepler was the founder of modern natural science which is exact, i.e. combines experiment and mathematics. As such, no one questions his authority.

Galilei and astrology.
G. Sarton, the connoisseur of the history of science, says: "Galilei was adamant about eliminating astrology as a form of superstition. He went so far as to emphatically reject the possibility that the moon, for example, influenced the tides. In other words: he did not even want to investigate the matter. Sarton therefore calls Galilei's passionate rationalism "no better than superstition."

Galilei and the interpretation of the H. scripture .
In 1992 Pope John Paul spoke before the Pontifical Academy of Sciences about Galileo's understanding of Holy Scripture.-- "Science and theology must act in the fullest autonomy." In other words, Galileo's professional science with free inquiry as its method has its own domain. Theology hers.--

The Pope: "Galileo appeared to have more insight (than the theologians)". Most theologians of the time did not get to the point - says the pope - where they could see the limits of their "understanding.

92.
Pretending the unproven as proven.
Bibl. sample: *Ch. Lahr, Logique,* 699.

1.-- *"Petitio principii*
Preposition of the thing to be proved.- - Thus the physician who mordantly (obstinately) claims that cholera is always fatal but confronted with a non-fatal cholera says, "That's not real cholera."

2.-- *"Circulus vitiosus".*
Vicious circle or circular reasoning.-- Sextos Empeirikos (tss. 100 and 300), the great skeptic, called this "diallèlos tropos" dialleel, because it is a kind of double petitio principii.

Descartes' circular reasoning.
Ant. Arnauld (1612/1694; le grand Arnauld) with *Pierre Nicole* (1625/1695) published *Logique ou Art de penser* (

Logic or Art of thinking), in 1659. "How can Descartes prove that he is not committing a circulus vitiosus where he claims that 'we are not sure that the things which we grasp clearly and distinctly actually exist unless God is there (...) '?

After all, we cannot be sure of God's existence unless we grasp that existence clearly and distinctly.

Thus: before we are sure of God's existence, we must be sure that the things we grasp clearly and distinctly are all true."

Axiomatic thinking and living.
Logicians such as Arnauld and Nicole say, "Most human errors are due not so much to the fact that they reason wrongly on the basis of true propositions as to the fact that they reason correctly on the basis of false judgments or untrue propositions."

If anything is true, concerning thinking, also of intellectuals, than what "la Logique de Port-Royal" just said! A voluminous but highly scientific book like *C. Hirsh-berg / M. Barasch, Guérisons remarquables*, (Remarkable recoveries), Paris, 1996, confirms this for the umpteenth time: cancers that heal spontaneously are put aside by doctors as being of no importance, in the name of what they learned in universities (the axioms).

By not addressing it, they can maintain the established theory (the prevailing paradigm (Kuhn)) and in ... their samples they then find only confirmations of the axioms. Such a thing is rightly called "axiomatic induction".

But not only intellectuals: many, many people uphold the axioms they acquired anyway (education, inclinations), through thick and thin.

93.
Deduction in narrative and historiography.

An event is the object of narrative and historiography. Now, a "history" is always a sequence of portent (containing the reason) and sequel (the inferable). "Johnny lied. The master saw through it".

A.-- *The common sense.*
"it had to be done." Therein expresses a necessity (and thus deduction).

Appl. model.-- A strike breaks out in a company.

1. Outsiders who do not know the omens (reasons) are surprised.

2. However, those involved say : a. the pattern was rock hard for months; b. the syndicates did not give an inch. The tension (indicating crisis, i.e. a situation that is unpredictable) was rising. "She was cutting." The insiders therefore say: "It had to come" (from the omens as necessary, yes, sufficient reasons one could deduce the sequel (result)"

B.1.-- *Thoukudides of Athens* (-465 / -401).

In his *Peloponnesian War, Thoukudides* proves himself almost as "rational" as a modern historian.

J.P. Vernant, Mythe et pensée chez les Grecs, II, Paris, 1971, 55, cites in this regard M.I. Meyerson: "The order of facts in Thoukudides is logical". Which J. de Romilly confirms: "Thoukudides' story - e.g. a battle - is a theory".

Note.-- 'Theory here is to be understood as "applied logic". Thoukudides depicts a victory achieved as confirmed reasoning: "If one knows the circumstances (precursors), then victory is deducible."

B.2.-- *Hegel.*

Reread E.L. 20 ("Reality").-- *Hegel* rationalizes total universe history in the name of his concept of "wirklich. -- In his *Grundlinien der Philosophie des Rechts* (

Basic lines of the philosophy of law), he says: "Alles was wirklich ist, ist vernünftig. Und alles was vernünftig ist, ist wirklich". (Everything that is real is reasonable. And everything that is reasonable is real).

In other words, what has its sufficient reasons is 'vernünftig' (reasonably justifiable) and precisely thus it is 'wirklich' (aware of its role in the event).

Thus, a government is "real" insofar as it correctly grasps the given and the requested and realizes the solution.

Note.-- We know very well that the postmoderns, in the form of a pervasive "narrativism," which identifies every science of history as first of all interpretation (hermeneutics) and even mere work of art (aesthetics), disagree with the positive (fact-revealing) and deductive narrative.

94.
Eulerian models: visualized identitivity.

Closing speech.
Two prepositional phrases ('praemissae': premises), as given (GG) logically lead to the requested (GV), the nazin. This event is governed by the identitive structure of all reasoning: total identity (of something with itself), partial identity (analogy) of something one something else) non-identity are model, intermediate model and counter-model concerning identity.

Visualization.
One can translate this into geometric figures that act as models of the original (identitivity).-- L. Euler (1707/1763; versatile Swiss mathematician) designed circles as models.

By the way: Ch. L. Dodgson (1832/1898; *The Game of Logic* (1886: a logic for children) and later J. Venn (1834/1923) visualized collections.-- Note: coincidence visualizes identity.

1.1.-- *Partial identity.*
Or "analogy". -- Take as our concluding line, "All top models are stars. Well. Tyra Banks is a top model. So Tyra Banks is a star".

Note the term "star" is broad (pop stars, theater stars, movie stars). Top models are stars (fashion stars).
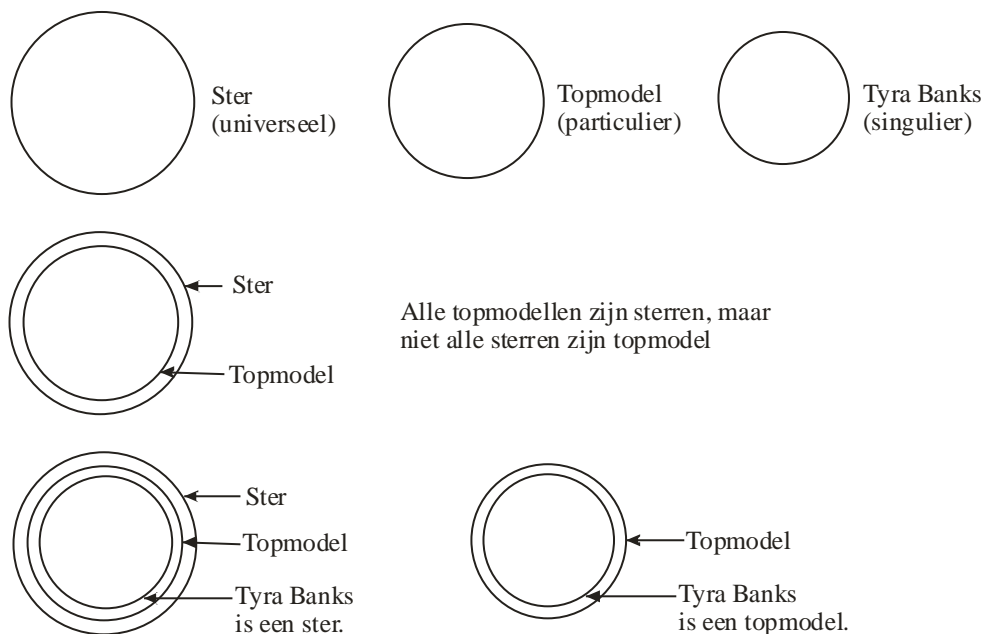
The comprehension dimensions are revealed by the radius lengths of the circles. Thus 'top model' includes Tyra Banks (as a copy of it). Thus 'star' includes 'top model' (as a subset of it).-- The partial coincidence symbolizes (partial) identity.

95.
1.2.-- *Partial identity.*
 "All cynical people are non-beneficial.
 Well, some people are cynical.
 So some people are non-loving".
Again, a deductive scheme (from all to some).

Beminnelijk   Cynisch   Mens

Beminnelijk
Cynici
Alle cynici zijn niet beminnelijk.

Mens
Sommige mensen zijn cynisch.
Cynici
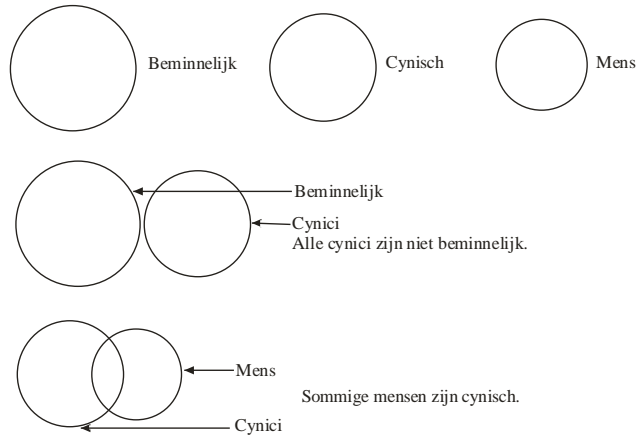
The circles, when the ratio "cynical/ amiable" is visualized, do not intersect. When the ratio "human/cynical" is visualized, they do intersect".

2. - *Total non-identity.*
 "All people are non-perfect.
 Well, Tyra Banks is a human being.
 So Tyra Banks is non-perfect".

Volmaakt   Mens   Tyra Banks

Mens
Tyra Banks is een mens.

Volmaakt
Mensen
Tyra Banks is niet volmaakt..
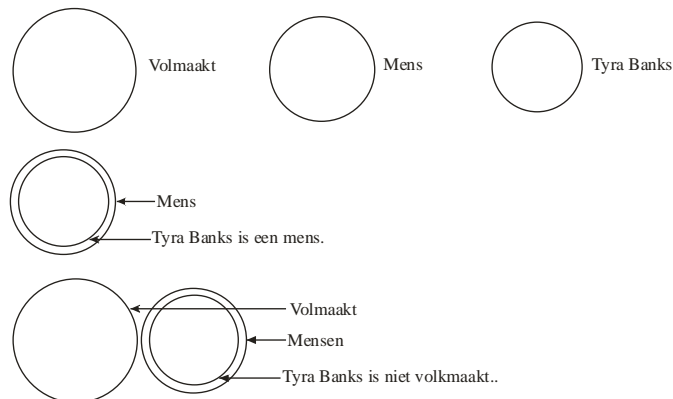
Note -- One can laugh at these visualizations. One may think that the identitive essence of traditional logic is an afterthought. Yet, for the umpteenth time, it turns out that it is not the simple-thought identity, as some logicians and cognitivists imagine it, but rather the multiple-thought identity that is the basis of traditional logic: model (total identity)/ intermediate model (partial identity) / total non-identity (counter-model)!

96.
'Epicheirèma' syllogism with embedded evidence.
'Epicheirèma': in ancient Greek 'approach', basis of operation. Defining *Aristotle*'s *Topika* as "briefly held argument," i.e., syllogism in which each preposition is provided with a proof.

As an aside, this is how we approach scientific reasoning.

1.-- *Mathematical.*
Bibl. sample: *J. Anderson/ H. Johnstone, Natural Deduction (The Logical Basis of Axiom Systems)*, Belmant (Calif.), 1962, 4.

a. -- **Theorem**.-- Show that $x((y + z) + w) = (xy + xz) + xw$.
b. -- **Proof**.-- In addition to what is already given (Given 1), in order to prove that judgment, an axiom is necessary that is put first as given (Given 2):
$x(y + z) = xy + xz$. For we are within an aximatic-deductive system.
Step 1.-- By virtue of the axiom: $x((y + z) + w) = x(y + z) + xw$.
Step 2.-- Also by axiom: $x(y + z) + xw = (xy + xz) + xw$.

Note -- "A mathematical assertion is proved by exhibiting it as the consequence of assumptions". A mathematical assertion is proved by demonstrating that it is the inference (derivation) from premises (axioms, theorems already proven).

2.-- *Legal.*
M.V. Cicero (-106/-43; Roman statesman and orator), in his *Pro Milone* (*Rede t.v. Milo*) following epicheima.

Sentence 1.-- For all cases, it is justifiable in conscience to kill an unjust assailant - in legitimate self-defense - himself first.
Evidence.
1. Natural law (the rules of conscience imparted with the general nature of humanity) and
2. the positive (stellar i.e. human-introduced) law justify such lawful self-defense.

Note.-- What the axioms are to mathematics, the "principles" are to morality concerning law. They are presuppositions.

Sentence 2.-- Well, Clodius was relative to Milo such an unjust assailant". Evidence. Clodius' **a.** criminal past, **b.** questionable escort, **c.** weapons demonstrate this.

Conclusion. -- So Milo in conscience was allowed to kill Clodius himself first.-- The latter is the thesis or 'thesis' to be proved: in Latin, 'propositio' As I said, this anticipates what in methodology or applied logic is called 'science theory' (epistemology).

97.

Methodology of natural science : evolution on knowledge.

I.B. Cohen, in his *Revolution in Science* (Harvard Univ. Pr.), argues that *science* is *one long (r)evolutionary process*. What follows illustrates that.

Bibl. sample: *Découverte* (*Crapauds contre infections*): (Discovery (Toads versus infection), *Journal de Genève* 30.12.87.

Introduction.-- Occultists (including the witches) prepared, in a "witch's cauldron," concoctions "to cure. Among other things, the toad served as an ingredient. It was thrown into the boiling cauldron.

1. *Observation phase*
M. Zasloff, biologist at the National Health Institute USA, used toads (Xenopus) for experiments. He was struck by the speed with which the toads, in non-sterile water, healed after surgery.

As an aside, as so often happens, Zasloff discovered this by accident.

2. *Hypothesis formation.*
His lemma: As a hypothesis, he proposed that the xenopus contains something (a "black box" or 'X') that strengthens the immune system.-- So much for the lemma. Now for the analysis.

3. *Deduction of tests.*
He designs a series of trials. Which amounts to sampling (induction).

4. *Assessments.*
He conducts the tests.-- Zasloff discovers an unknown class of molecules with microbedding traits. After the Hebrew word "magain" (shield), he calls them "magainines. These are two small proteins that are abundant in the skin of frog-like animals. Remarkably, Zasloff managed to secrete the gene that controls the magainines. Well, the magainins are a defense mechanism independent of the known immune system. They rapidly inhibit proliferation of numerous species of bacteria, mushrooms, yeasts, and even primordial animals (unicellular).

5. *Value judgment.*
These inductions are in themselves material for the research community to test around the world. Moreover, according to Zasloff, magainins may be used to treat infections. In other words: science evolves and creates perspectives for future research.

Note.-- *P. Feyerabend* (1924/1994; epistemologist), known for his *Against Method* (1975), represents an anarchist rationalism that, among other things, ascribes to magic some degree of scientific rationality. His thesis can be called "epistemological sprawl." Zasloff's open-mindedness confirms Feyerabend.

98.
Method theory (humanities) definition and definition testing.
C. Rogers (1902/1986) once agreed with the saying of Kurt Lewin (1890/1947) "Nothing is so practical as a good theory." -- Science and theoretical concepts go together. Dwell on that,--at least with respect to the behavioral sciences.

Bibl. sample: J. de Jong-Gierveld, The concept of loneliness in theory and practice, Deventer, 1980.

1. *Observation.*
One collects 'data', loose data on the subject. One meets someone who labels himself as 'lonely'. A conversation follows. One makes a global understanding.-- One consults literature.-- Further testimonies specify.

2. *Hypothesis formation.*
De Jong-Gierveld calls this "conceptualization. We adhere to 'definition' A theory is invariably a definition of a phenomenon,-- here loneliness. The concept of loneliness includes -- according to the testimonies:
a. missed contact with family, friends, environment;
b. usually eliciting predominantly negative value judgments.-- Something like this is likely to recur again and again in the facts.
So much for the lemma (preliminary conceptualization). Now for the analysis.

3. *Deduction of tests.*
Here de Jong-Gierveld uses the term "operationalization," i.e., the theoretical concept of "translating into empirical variables. Understand tests. For example, one question, "Do you feel lonely?" (which is a very narrow base). Or: a scale (e.g., ten negative and ten positive questions). Each time in the context of a well-prepared "human contact" with those directly involved.

4. *Tests.*
The fieldwork, i.e. the practical checking with those who feel lonely, naturally includes surprises. There are those, for example, who interpret "loneliness" as the eremites did (and still do) at the time, seeking "loneliness" in order to come to themselves (and to God).-- This type of "loneliness" must be built into the theoretical understanding if the theory is to be "good.

5. *Value Judgment.*
Operationalizing concepts always includes surprises, of course. These, however, make conceptualizing evolve. Which is typically scientific (Th. Kuhn, I.B. Cohen).

*Note -- '*Empirical' can stand in opposition to 'mathematical'. But often it stands opposite 'experimental' as passively observed versus actively (through one's own intervention, e.g. testing) observed.

99.

Methodology (science theory) : "applied rationalism".

 Fr. Guéry, *L'épistémologie* (*Une théorie des sciences*), (Epistemology (A theory of science),), in: A. *Noiray et al, La philosophie*, 1, Paris, 1972, 135/178, discusses at length Gaston Bachelard (1884/ 1962; epistemologist) who defines science as "applied rationalism." - Let us consider how rationalist modern science is and how it is rationalist. Guéry's definition now follows.

A.-- *Material object.*

Anything, insofar as it is distinguishable as a phenomenon from the rest, can be an object of science. This of course excludes the object of philosophy which exceeds every scientific phenomenon. - Science, in other words, is purely professional science.

B.-- *Formal object.*

This is the viewpoint (perspective) under which the professional scientist approaches the phenomenon.

B.1.-- *Description.*

Rationalist sciences adhere to the phenomenon, i.e., the directly observable. In this sense they are purely phenomenological. The given (GG) governs everything.

Rationalist description.

Since exact natural science (Copernicus, T. Brahe, J. Kepler, especially G. Galilei) - which works experimentally-mathematically - only the secularized (secularized) phenomenon comes through.

By the way: when e.g. Galilei wanted to eliminate astrology (part of the occultism of the time) mordantly, he proves the will to reduce the phenomenon (reductionism) to all that is non-occult, yes, non-sacred. Matter, seen as machine, i.e. mechanically describable reality, is the object par excellence. That Galilei meant it is shown by the fact that he did not want to investigate even the materially observable tides.-- The later materialists will continue this radically. Whereby scientism triumphs.

B.2.-- *Statement.*

One can see that the hypotheses that should make the phenomena understandable ('explain'), already come through in the choice of the phenomena. As *de Groot* (*Methodology*) says: in the observation that collects the data (phenomena), hypothesis formation is usually already at work.

In other words, "objective" in the sense of "unbiased" is not rationalist science. It is fundamentally a choice. Controlled by axiomata.-- Which K. Popper, I Lakatos, Th. Kuhn, P. Feyerabend, as well as the recent postmodernists (J. Derrida) have denounced.

01. Study notes

After describing the theme (01), it is said that the course is an introductory course (02).

Part I: Ontology.

Philosophy, in the great tradition, is ontology, i.e. theory concerning all that, no matter what, is real. This has been recorded since the ancient Greeks in the term "being" and "being.

Actual existence (existence: how real is something?) and being (essence: how is that something real?) make up the conceptual content of "reality" (03).

Then it is specified that it is about the identity or singularity of what is real or being(s), and its extent (domain) is indicated (all,-- all that something is; transcendental) (04).

The term "reality(s)" is used differently in ontology than, in non-ontological language (colloquialisms; some scientific language uses): signs (which are said not themselves to be the reality to which they refer (map / signpost; abstract-mathematical signs)) are being) iets; thus they fall under the purview of ontology (05).

Immediately we give a first example (applicative model) of reasoning, main object of traditional logic: from axioms (presuppositions) one deduces propositions (05).

Becoming, dreamed reality, fantasized reality are dismissed as "unreal" outside of ontology: in ontology they are non-nothing, thus something and at once realities (06)

The construction of logic.-- "If reality, then reality". Logic is ontology in terms of "if. then" sentences. These sentences involve concepts (terms), expressed in judgments (propositions). A reasoning is a conditional judgment. Immediately we have the three parts of logic. (07).

Healthy, and common sense are normally logical (08).

Part II: phenomenology.

Reality:

a. Shows up (is "phenomenon" or "phenomenon") and

b. allows itself to be demonstrated. One is the work of phenomenology; the other that of logic. Since the "if" sentence is always a given (GG) and thus something that shows itself, logic is always phenomenological to begin with.

Those who understood this duality well, in ancient times, are the rhetors:

a. they describe what shows up (or is seemingly evident);

b. they show what does not show itself, thus combining phenomenology and logic (09/10).

02. Study notes

Phenomenology is observing what shows itself (direct knowledge). This is evident in signs, among other things: a sign is **a.** something that shows itself and **b**. something that refers to something that does not show itself but is demonstrable. (11).-

Phenomenology, if strict, limits itself to the phenomenon: just that and all that ('reduction'). In other words: the given (GG) is the demanded (GV) as far as cleanly perceivable and representable. (12).

Hermeneutic.

According to Peirce, man is essentially an interpreter(s). I.e.: he/she perceives (grasps sense) but exceeds the directly given by interpretation (establishes sense). This is shown by comparison of healthy with neurotic and psychotic mind. (13 / 14).

Intentionality.

The Scholastics (800/1450) drew attention to consciousness as paying attention to something (= intentionality). But we can also pay attention to paying attention to something (which leads from cognition to metacognition). Phenomenology is essentially the methodical form of paying attention to something, i.e. insofar as the phenomenon is, i.e. shows itself. (15).

This is reflected in the semantic stages that make language central rather than the intentionality expressed in it: object, language and meta-language (citation). Immediately a word about "mental restriction" (16).

Axiomatics.

To grasp reality (sense,-- to begin with phenomenologically) is to grasp identity, to identify. This is governed by the principle of identity (all that is, is) (17). Grasping reality (phenomenological but mainly logical) is also seeking the (sufficient) reason ("If sufficient reason, then something intelligible").(18).

The reason or ground is clarified when one rewrites in "if, then" sentences. (19). Hegel's concept of Wirklichkeit is an application: whatever has a reason is "real" (justified). (20).

Again: intelligible ('wirklich', justified) data are data insofar as one knows their reason: deductively and reductively. (21).-- The two basic axioms -- identity and sufficient reason -- are not rationally provable : they are 'given' (22).

Conclusion.

With this we are through the foundation: being(de), phenomenon and what can be logically derived from the phenomenon: ontology, phenomenology, -- logic.

As an aside: the Greek 'theoria', (lat.: speculatio) was that: being to perceive and logically fathom.

03. Study notes

Part III.-- Order(s) doctrine.
Ontology talks about being(the), reality. Well, one of the main characteristics of all that is is that it is one. This is how the ancient Greeks put it. - Platon distinguishes two main types of unity.

1. *Collection* (all that is specimens resembling each other make up a 'set').

2. *System* (all that, however diverse, is related, constitutes a 'system'). For this he has terms like all and whole.-What the middle ages translate into distributive understanding (totum logicum) and collective understanding (totum physicum).-- Immediately we have the actual basis and the actual object of traditional logic: henology (unity theory).(23).-- Since similarity and coherence found order, harmology or order (nings) theory is another name for unity theory. *S. Augustine's De ordine*, is the first work on the subject. Combinatorics is the doctrine of ordering (Augustine, Leibniz), i.e. situating data within a configuration. (24).

Applications.
Systechy (opposition pair). Differential (systechy with intermediate models). Mathematical configurations. (25).

Relationship logic.
Identity is another name for the object of logic. Total, partial, and totally absent identities are collectively the horizon within which thought and reasoning take place. Partial identities and non-identities make up the relations. Logicians confuse logical terms with e.g. words. (26).

Arithmetic. Since Fr. Viète one distinguishes ordinary language, numerical language and literary language. Arithmetic is typical of logics (syntactic values). Logic takes into account the eidetic (semantic) sense of signs with which to calculate. (27).

Partial identity -- or analogy.
The total identity is articulated in the definition. The partial identity makes up the lion's share of the logical operations. Two main types: similarity ("This is an apple") cohesion ("This apple is healthy"). In each case, a common property is at stake, -- a distributive or a collective one. (28).

Identical model theory.
'Model' is anything that provides information about something else. That something else is called 'original'. Two types.
1. Distributive (metaphorically: Johnny and the chickens) and
2. Collective (metonymic: Smoke is fire). One also says 'proportional' and 'attributive' analogy. '29).

04. Study notes
 Basic differentials.

There are two logical squares, one distributive and one collective (people and the whole human(s)). (30).

Tropology.

When people speak metaphorically (tropologically), this speaking shows similarity (metaphor) and coherence (metonymy). Ribot's psychology of feeling. (31).-- Metaphor.-- "That woman is a reed". Identifying on the basis of similarity. (32). Metonymy.-- "Apples are healthy." Identifying on the basis of coherence. (33).-- Synecdoche.-- Metaphorical: "A soldier stays at his post" (all is identified with one or vice versa). Metonymic: "The beard is there" (the part is identified with the whole or vice versa). (34).

Note -- One sees it: all of tropology illustrates identitability.

Logical.

In the synecdoche, two types of induction stick out: generalization (from one or some to all) and generalization (from one or some portions to the whole). (35).

Part IV.-- Logic.

After the fundamentals the exposition.

IV.1.*-- Concept Logic.*

A concept is "a being insofar as it is in the mind." It is represented linguistically in a term which is a text.-- One distinguishes two aspects: content (the knowings of something) and extent (the things to which the content refers). "All that ... is" ('all that' = extent, ... = content; 'is' situates in reality). (36).-- Logic works with defined concepts. (37).-- Magnitude types.-- Distributive: singular, private, universal). Collective: single, multi-part, total.

In passing, "idiography" (monograph). (38).
erloops: the transcendental (all-encompassing) scope has as its content 'being(the)' and defines the ontology. (38).-- Appl. model of classification: 'social critique' (five types). (39). The concept of 'classification'.-- Taxinomy. Distinguished, not separated and as complete as possible. Again: distributive and collective. The notion of 'scale' (aesthetic). (40).

Definition doctrine.

Model (social criticism). (41).-- The concept of definition: the content of a concept and only that content and entirely that content. This can be done in a text that is a full sentence. But often a (much) more elaborate text is necessary.(42).-- Distributive definition: categoremes (predicabilities (43) and categories (predicaments) as a collective definition (44). Which proves that defining requires more than one definitional sentence.

05. Study notes

Typology of definitions.
Semiotic (performed in abstract sign language) and operative (performed in empirical and experimental acts) definitions. Abstain especially from the algorithmic and the physics-operational ones. (45).-- Partial (nominal) and overall (real) definitions.(46).-- Definition of the singular (the unique, just the unique, whole the unique).(47). Process definition (praxeological): so e.g., the industrial definition (substructure/superstructure). The concept of dynamic system. (48). Algorithmic definitions: kitchen definitions and arithmetic. (49). Convergent induction as definition: concurrency of designations (treasure hunt).(50). Judicial definition: storytelling is defining (51). Definition of the concept of culture (problem solving). (52). Definition of beauty and work of art (Readymades).(53). A text as definition (content and scope or moral lesson and story of one model). Without the sample empty. Without the moral lesson blind. (54). Terms as themes of text formation (word/ relate/ judge/ whole text). Textuology. (55). The antique chreia as (veral-helpful) definition. (56/57).

IV.2.-- *Judgmental logic.*
Concepts are the underpinnings of judgment.

Definition.
To assert of something. To assert from an original (asking for information) a model (providing information). It is always with the subject to identify the saying entirely (e.g., in a definition), partially or not at all. (58). - The size of the subject decides the quantity (distrib. or coll.) the model/intermediate model or counter model of the saying decides the quality.

In passing: the nuanced judgment (in some ways yes, in some ways no). (59). Subject / saying / clauses (modalities). (60). -- logical modalities in understanding, judgment, reasoning: necessary / not necessary / necessarily not. (61). A text affected by context ("Hilde is running or Hilde is walking"). Decidability of a text. (62).

Comparative Method.
'Comparing' is not 'equating!' ' It is paying attention to similarity and coherence. Judgment stands or falls with that. Internal and external, quantitative and qualitative comparison.

Measurement
(compare with a measurement model). (64). Judgments rely on comparison. Discussions. (65).

Not.
The judgment term "not" (correlative, contrair, privative, contradictory (inconsistent)). (66).

06. Study notes

Application: "square circle" = absurd, i.e., absolutely nothing (proof from the absurd). (67).

Relevant judgment.
Discussion with logicians and cognitivists who claim that traditional logic cannot articulate relations in a logico-strict way. A relation is a property of something insofar as it is compared to something else.(68).

The sufficient reason for a judgment.
A judgment is "real," i.e. accounted for semiotically (significally, semiologically) as a language act syntactically, semantically, and pragmatically: "It's sunny today. (69) -- The sufficient reason of a value judgment. Types and "This child is a treasure" (syntactic, semantic, pragmatic). (70).

The conditional judgment.
The entailment (implication) ("own to"). Categorical and especially hypothetical (if, then) phrasing. (71). This is the transition to reasoning theory.

IV.3.-- Reasoning logic.
The infrastructure are the concepts and the judgments. Two types: immediate derivation (which is strictly logical appearance) and indirect derivation (syllogism).: deduction and reduction (necessary and non-necessary. (72).

Immediate distractions.
The complete or summative induction and the mathematical induction. (73). Opposing judgment (in passing: insinuating figure of speech). (74). Inverted judgment (subject becomes proverb and vice versa). (75). Analogical induction: from less to greater similarity (basis of comparative sciences: concordism/ identitive logic/ different(ial)ism). (76). A-fortiori reasoning (already ... all the more). (77).

Medium derivations (syllogistic).
A syllogism involves three concepts (if not polysylogism or accumulation (sorites)) (78). Typology: major term/ minor term and middle term can be combined to 256 forms of which 19 are valid and 5 or 6 are used.(79).

Deduction (sunthesis) and reduction (analusis).
"If A, then B. Well A (sufficient reason). So B" is the formula of deduction. "If A, then B. Well, B (insufficient reason). So A" is the formula of reduction. The deduction is necessary (strong modality). The reduction is non-necessary (possible, probable) (weak modality). (89).

07 study notes
Universal and statistical induction.

Either 0 or 100% or in between. Opinion polls: quantitative and qualitative. (81).-- Two types of reduction and thus of deduction: distributive and collective. Peirce's bean example: the generalization and the generalization are potentially present in the deduction (types). (82). Collective syllogism (coherence). (83). Proof from the incongruous: as eristics (deconstruction, falsification: the weaknesses). (84). Dilemmatic capstone (either-or). (85).

Lemmatic-analytic reasoning.

The introduction of a lemma (for the unknown A or preposition) as a hypothetical model. Analysis or testing of it. (86). Peirce's pragmatic maxim: "By their fruits ye shall know them" (the world in the making). (87). School paradigm "Guess which bird that feather belongs to." (88).

In passing, "Neither thou nor I ... " (dialectical undecidability).

Dialogic induction.

Socratic-platonic method : democracy in logic.(89). Authority argument : one's understanding concerning a domain (e.g. Einstein's concept of relativity). (90). Domains of authority.-- Value-free science does not exist. However, domain values do exist! Economics and ethics. Physics and astrology. Physics and Bible interpretation. (91).

Pretending the unproven as proven.

"Petitio principii" and "circulus vitiosus". The insights of Port-Royal's logic on axiomatic reasoning and especially axiomatic induction (also in scientific centers. (92).

Deduction in narrative and historiography.

"It had to come". Thoukudides' historiography as "applied logic". Hegel's rationalization of all history. Contested by postmodernists. (93).

Eulerian models.-- Identity visualized. (94/95).

Science Theory.

The epicheirema (syllogism with embedded proofs - mathematical (axiomatic-deductive) and legal model - is the vestibule of science.(96).

Evolution on knowledge:

Zasloff's discovery of the magainines and definition and definition testing (97/98) as observation/hypothesis formation/deduction of testing/testing/evaluation.-- Sciences, insofar as modern, as applied rationalism describe phenomena but not without rationalist axioms: the explanation type determines the choice of phenomena under study. (99).

50. Elements of Philosophy 1997/1998;
First year: elements of thinking theory (logic)

02. *A propaedeutic course.*
03. *Ontology (theory of reality).*
04. *Definition of 'reality' or 'being(s)'.*
05. *Syntax of characters.*
06. *Use of the term "real".*
07. *The construction (structure) of traditional logic.*
08. *Common sense and logic.*
09. *Rhetoric about given (phenomenon) and asked (reasoning).*
10. *The immediately obvious or known*,
11. *Phenomenological method.*
12. *Phenomenological 'reduction' (limitation).*
13. *Meaning: sense of purpose / sense of purpose.*
14. *Mind (interpretive): healthy, neurotic, psychotic.*
15. *Phenomenology and logic: transition from cognition to metacognition.*
16. *Semantic stages: object.-- language. Meta-language.*
17. *The Identity Act.*
18. *The necessary and (preferably) sufficient reason (ground condition).*
19. *The rewriting method and its metacognitive scope.*
20. *Hegelian notion of "real(ish).*
21. *The law of comprehension.*
22. *The foundations of phenomenology and logic.*
23. *Part II Henology (unitary theory).*
24. *Harmology (order(s) doctrine).*
25. *Applied harmology.*
26. *The so-called logic of relations.*
27. *The logical essence of arithmetic.*
28. *The partial identity.*
29. *Identical model theory.*
30. *Basic differentials.*
31. *Id. value sense.*
32. *Tropology: metaphor.*
33. *Tropology: metonymy.*
34. *Tropology : synecdoche.*
35. *Generalization and generalization.*
36. *Comprehension logic.*
37. *Concepts as far as distributive or collective are central.*
38. *Size types.*
39. *Model of classification of a concept.*
40. *The concept of classification.*
41. *Model of definition of a term.*
42 *The concept of "definition" (essence determination)*
42.1 *Model of axiomatic definition: the positive integer.*
43. *Categorems (predicabilities).*
44. *Categories (predicaments).*