8.10. ***Elements of thought theory***
Elements of Philosophy
Higher Institute of Pedagogy 1992/1993 (3de years)

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Contents: see p. 80

First year : elements of thinking theory (logic)
Preface (01/05) In a preface, some preliminary concepts are discussed. They highlight in a propaedeutic way what follows.

The course.-- Already the ancient Greek mathematicians -- they went about their business as logically as possible -- did it when solving problems.

a. They put the given first (here: the actual thinking or 'reasoning' of people as they are; the norms (laws or rules as they are found e.g. in the books of theoretical logic)

b. immediately they thought of the requested (sought), Here are what the Antique Greek language calls "the elements" (reasons, grounds, postulates) of logical proceeding. Called "element" all that makes something understandable. Here: all that makes logical reasoning intelligible, 'justifies', 'explains', 'makes justifiable'.

As an aside: in Ancient Greek this is called "stoicheion", (Lat.: elementum), Or still "archè" (Lat.: principium), principle, "principle". Or also: 'logos' (Lat, ratio), reason or ground. In the language of more recent semiotics (Ch. S. Peirce): all that makes logical language use and the meta-language about that language use (language about the logically strict language) intelligible, is the demanded.

Propaedeutic course.
"Elements of logic" can also be used in a narrower sense, i.e., "the most easily understood elements" of logical action. This course is therefore "propedeutic" "Propaideia" (a "paideia" or formation for the actual, specialized paideia: also "pro.paideuma") therefore means "introductory or elementary instruction.

Information and Method
1. This course provides first of all information (for beginners), i.e. insights, not in a dilettantial (enthusiastic, superficial) sense, but also not in a specialist (too in-depth) sense, The dilettant 'knows something about everything'; the specialist 'knows something about everything'. But in a general formative sense. Something that at the world famous Harvard University (USA) is called "Harvard principle" or "Harvard principle":

specialists (as opposed to "generalists") at that university are supposed to take care of their general education (in all kinds of auxiliary subjects) such that they do not fall into -- what MacLuhen called -- "vocational idiocy" (one-sided subject knowledge).

As an aside, one of the meanings that the Antique Greek word "philosophia" (philosophy) has is "general education.

2. This course provides, further method, i.e. reasoned, with 'reasons' or 'grounds' substantiated approach or approach. Not fashion, i.e. a wave of interest that comes as it will go, -- swift, because too superficial in nature. Nor 'ideology', i.e. a convincing but all too realist construct of thought.

The term "elements".

In Ancient Greek, 'stoicheion' or element is called anything that - as a totality (collection of equal specimens or system (system) of related data) - makes something intelligible, 'meaningful', 'intelligible'. Is called, however, in the first place, 'element' all that - as specimen or part - makes a totality (collection, system) intelligible.

Applicative models (applications)

1. The Antique Greek *Eukleides of Alexandreia* (Lat.: Euclid) (-323/-203) titled his famous mathematical work "*Stoicheia tès geometrias*" (Elements of geometry).

2. S. Paul (5/67), the "apostle of the Gentiles," in his Letters to the *Galatians (4:3 4:9*) and *Colossians (Col 2: 8 2: 20; cf. 2: 5; 2: 8*), mentions "the elements of the cosmos." By this he means, first of all, all that makes the cosmos or world as it is intelligible (explains what happens in the world). But very particularly he thinks, in doing so, of the 'beings' (angels, powers and forces) who, according to late antique philosophies, control the course of this world and are, in that eminent sense, " the elements par excellence of this world or cosmos". Something that, in passing, is returning in New Age.

3. Closer to us *Bourbaki, eléments de mathémetique*, (elements of mathematics), Paris, Herman, 1939+, "Bourbaki" is a group of French mathematicians who, inspired in part by Georg Cantor 's Theory of infinite sets (1880), co-founded "the new mathematics.

Conclusion. -- By taking 'elements' as our title, we are situating ourselves in a centuries-old, solid tradition of proceeding logically: after all, the term 'elements' is a strictly logical one.

The ancient Greeks as predecessors (03/05)

Whoever says ‘philosophy’ actually says ‘Greek philosophy’. Not that the Primitive (= Traditional or Archaic) cultures or the non-Western civilizations do not know ‘philosophy’! And yet: “philosophy” in the broad sense (general education or “wisdom” as it was called in antiquity) and, above all, in the strict sense (introduced especially since Platon of Athens (-427/-347; the founder of the “Academy”)) is first and foremost Greek heritage.

“The decisive factor in, the formation of a separate European entity was the merging of the Greek cultural tradition with Christianity. The new religion quickly spread over a world in which Greek culture was leading.” (*Anastasios Kallis, Altera Pars (An Orthodox View of Europe*), in: Strive 59 (1992); 12 (October), 1060),

You, student/studentess, will notice for three years: the Ancient or Antique Greek thinkers will be mentioned, again and again, or even cited as our teachers,

a. *Some contemporaries* want to see the subject of history abolished, Especially all that is Antique Greek must go. It already begins with the Protestant church historian *Adolf von Harnack* (1851/1930; *Geschichte der altchristlichen Literatur* (History of ancient Christian literature), (1882+); *Dogmengeschichte* (Dogma History), (1886/1889)), who saw in “the Hellenization of Christianity” a degeneration of the same Christianity (which Klaus Oehler (Hamburg) calls a textbook example of misunderstood history),

b. *Others*, including the existential thinker *Martin Heidegger* (1889/1976) known for his *Sein und Zeit*) (Being and time), following in the footsteps of Friedrich Nietzsche, see in Ancient Greek thought (especially in that of Socrates and Platon) a hitherto unparalleled paragon, They “repristinate,” (return to a paragonal epoch).

Whatever may be the case, if one knows nothing or too little of the Ancient Greeks, many things will remain even today, in their historical course, misunderstood. In other words, ancient Greekness is, from a cultural-historical point of view, one of the main premises or ‘elements’ for understanding our European world and life.

Let us explain,

a.1. O. Willmann, *Abriss der Philosophie (Philosophische Propädeutik*, (Outline of Philosophy (Philosophical Propaedeutics,), Wien, 1950-3, 13, says: the root of our theory of thought and applied logic (methodology) is Antique Greek.

This is confirmed by a book like *P. Foulquie, La dialectique*, Paris, 1949, which situates the beginning of dialectics (one of the methods of reasoning) with Zenon of Elea (+/- -500).

a.2. *E.W. Beth*, *De wijsbegeerte der wiskunde (Van Parmenides tot Bolzano*), (The Philosophy of Mathematics (From Parmenides to Bolzano)), Antwerp/Nijmegen, 1944, convincingly demonstrates that our mathematics is, to a large extent, rooted in the ancient Greek mathematics of numbers and space

a.3. *J. Rosmorduc,* *De Thalès à Einstein (Histoire de le physique et de la chimie* (From Thales to Einstein (History of physics and chemistry), Paris/ Montreal. 1979, let our physics and chemistry begin at the founder of Greek thought Thales of Miletos (-624/47),.

a.4. Our medicine begins with the Ancient Greeks: O. Willmann, *Geschichte des Idealismus, I (Vorgeschichte und Geschichte des antiken Idealismus*), (History of Idealism, I (Prehistory and History of Ancient Idealism).), Braunschweig, 1907 - 2, 302, says: "Pythagoras called 'healing medicine' (*note:* understand 'healing skill') 'the highest degree of wisdom men possess' (...) (Jambl. iv. pyth. 82)".

Maintaining and restoring health is, in Paleopythagorean view, task specific to 'wisdom' (the term for "general education"). In other words, wisdom, including in the form of 'sophrosunè', thinking truthfully (the opposite of 'parafrosunè', thinking beyond reality, "not being wise") is the main condition of health. The Pythagoreans of the time went so far as to regard philosophy - from its musical point of view (music, song and dance were one of the methods) - as one great health science and even as one form of medicine,

a.5. E. Ch. weiskopf. *Hrsg. Soziale Typenbegriffe im alten Grisechland und ihr Fortleben in den Sprachen der Welt* (Ed. Social type terms in ancient Grisechland and their survival in the languages of the world), (7 volumes), Berlin, Akademie-Verlag, 1981/1982, shows us more than convincingly how our social theory has its beginnings in Ancient Hellas.

a.6. *R. Barthes, L'aventure sémiologique*, (The semiological adventure,), Paris, 1985, esp. 88/185 (*L' ancienne rhétorique*), (The old rhetoric), proves how we still have today, with respect to the theory of persuasion and communication - a.o. with respect to persuasion and influencing techniques - the Antique Greek rhetors as predecessors.

This confirms in her sovereign way Jacqueline de Romilly, *Vivant les langues mortes*, (Alive the dead languages), in *Reader's Digest* / Sélection (Zurich, CH), 1991: octobre, 118s. "For some years now, one has seen scientists and industrialists who are tired of working with people who cannot compose a text.

Nor can they order an argument: they insist on “un retour aux humanités” (a return to the humanities)”. In other words, the so-called dead languages - Greek, among others - are bearers of a strict logical ability without which even the professional scientists and craftsmen are constantly inhibited.

b. ***Regarding philosophy:***

Anyone who knows a bit about the subject will agree that, as far as we really think logically about the world and life, we incorporate Greek heritage.

Conclusion: - The three great legacies - professional science, rhetoric, philosophy - constitute the fabric of the West. One can, with a Heidegger, want to “destruieren” (Destruktion) that fabric or, with Derrida, want to “deconstruct” (déconstruction) that same fabric, because it has partly led to mischief. To really replace it will be something else. By what? We see only one way out: by an actualization and/or re-foundation.

Bibl. Sample:

-- *La Grèce antique*. (Ancient Greece), In: *Historia spécial* (Paris) 1990: juillet/ août:

-- M. Danthe. *Essai (Amérique, ou est la culture?),* (Essay (America, where is the culture?),), in: *journal de Genève* 23.05.1987 (On 15.05. 1987 Allen Bloom, sociologist (Univ. of Chicago), receives the Prix Rousseau in Geneva, in connection with his work (French transl.: Allan Bloom, *L’ âme désarmée*, (The disarmed soul), in which the author observes that the US students are absorbed in Rock ‘n Roll music but no longer know the classics - the Bible and the Greco-Latin writers - with the result that in terms of worldview and philosophy of life they sometimes fall back on the primary ideas of cartoons and TV stars)

-- Cfr. his *The Closing of the American mind*);

-- *W. Hochkeppel*. *Current classical philosophy*, Utrecht. Aula, 1984 (Socrates, Sophists, Kuniekers. Skeptics, Epicureans, Stoics are discussed as also still valid thinkers for us);

-- A.*A. Long* (Berkeley, Calif.), *Finding oneself in Greek philosophy*, in: *Tijdschr. v. Philos*. (Leuven) 54 (1992): 2 (June). 255/279 (in which the proposer poses the hermeneutic or problem of interpretation: how to rethink Antique Problems and solutions as current Westerners who apparently, willingly in even more unwillingly, think “Greek”)? Up to there a few samples regarding “the Greeks as predecessors”

First sample.-- the past of the theory of thought. (06/08)

I.M. Bochensky, O.P., renowned Sovietologist (as such adviser to governments at the time), who situates himself in what is called - "Analytic philosophy" (meaning: a type of philosophy which puts the analysis of language (and language about language or meta-language) first) says that the history of logic, which he identifies to some extent with formalized (so-called mathematical or still symbolic) logic - shows three waves,

(1) he ancient logic (IV th / III - the century BC),
(2) Middle-century logic (XII- the / XIII- the century, the heyday of middle-century or "scholastic" philosophy).
(3) current (mathematized (= formalized)) logic (since +/- 1850).

Between these three flourishing periods there are long periods of neglect, indeed of great ignorance concerning logic.-- Thus the modern period. "The modern era since Descartes (1596/1650; founder of typically Modern philosophy) is so terribly ignorant that any 'modern' philosopher -- except Gottfried Wilhelm Leibniz (1646/1716), one of the greatest Kartesianizing Rationalists -- would have failed in his first-year Logic exam," Bochenski puts it literally.

Bibliographic Sample. -- We present here a selection from a confusing mass of works and articles. It shows some of the main viewpoints under which one can look at the logical process.

Historiographic.

-- Carl Prentl, *Geschichte der Logik im Abendland*, (History of Logic in the Occident,), de, 4 Bde, 1865/1670, - Leipzig, 1927-2 (still very valuable);

-- J.B. Rieffert, *Logik (Eine Kritik an der Geschichte ihrer Idee*), (Logic (A Critique of the History of its Idea)), in: Max Dessoir, Hrsg., *Die Philosophie in Einzelgebieten*, (Philosophy in individual areas,), Berlin, 1925, 1/294 (Language logic (Artstotle, Bolzeno), case logic (Kant, Mill, Trendelenburg et al.), reine logic (logistic (= formalized logic),

-- *Husserl, Meinong" Rehmke et al), methodelogica* (= Methodologik: Kant, Frie, Windelband, Royce, Lotze, Brentano, Dilthey et al);

-- *R.H. Claes, Survey of the evolution of logical theories (from antiquity to the present*), Louvain, 1974 (analogous to Rieffert o.c., 9/60 (types of logic).

Systematic (methodical)

Here are the titles of some of the expositions ("tracts").

-- B. *Bolzano, Versuch eines ausführlichen und grösstenteile neuen Darstellung der logik*, 1837-1 (Attempt of a detailed and mostly new presentation of the logic,), Bolzano's logic sees as its core "judgments or statements in themselves", this Catholic priest was the pathfinder of set theory and of the theory of real functions);

-- A.D. Twesten, *Die Logik*. Schleswig. 1825 (identity and its variants are the basis of all logical action);

-- O. Willmann, *Logik.* in: *Abriss der Philosophie*, Wien, 1959-5 (Willmann 's logic appeared in 1912;

-- K. Leonard. *An introduction to the theory of thought*, Antwerp / Leuven / Brussels, 1932-1, is an adaptation);

-- D. Mercier, *Logique*, Louvain, 1922 (Mercier, at the behest of Pope Leo XIII, initiated a re-founding and updating of medieval, "Scholastic" logic that was essentially Aristotelian);

-- Wesley Salmon, *Logic*, Prentice-Hall, 1963 (*deduction and induction as forms of reasoning; language and logical thinking*);

-- Ch. Lahr, *S.J., Logique*, in: *Cours de philosophie*, Paris, 1933-27, 480/715 (a typical Kartesian-French rendering of Aristotelian logic);

-- H.J.De Vleeschauwer, *Grondbeginselen der logica*. (Fundamentals of logic.), Antwerp, 1931 (De Vleeschauwer was a follower of the German Enlightenment rationalist Kant);

-- P. van Schilfgaarde. *The Logic of Aristotle*, The Hague, 1956-2 (as a Hegelian, the proposer presents the Aristotelian theory of thought);

-- E. Husserl, *Logische Untersuchungen (I, Prolegomena zur reinen Logik*, (Logical Investigations (I, Prolegomena to Pure Logic), (1901) (Husserl, the founder of intentional Phenomenology, pointed to the excellent conceptions of B. Bolzano, with a view to overcoming 'psychologism' concerning logical thought operations)

Note - This shows **(1)** that logic is open to more than one interpretation (interpretation), **(2)** that Aristotle's works remain authoritative to this day.

Aristotle of Stageira (the "Stagirite" (-384/-322)), disciple of Platon, founder of Platonism, wrote a series of works:

1. Peri katègorion (On the fundamental concepts), a theory concerning the concepts (conceptions, representations);

2. Peri hermèneias (On the judgment (literally on the interpretation), a theory concerning the judgments (statements, sentences, propositions;

3. Analutika protera (Logical Texts 1) (on the logical -- Aristotle says "analytic" -- reasoning) and Analutika hustera (Logical Texts 2) (on proofs.-- Definition and classification of concepts -- prepositional phrases (from which to infer)).

These three works together are called "organon" (thinking instrument).

It should be said at this point: according to Aristotle, the three "stoicheia" (points of learning to be presupposed), regarding logical (he says "analytical") work;

a. Concepts. **b**. Judgments and **c.** Reasoning. These three 'govern' ('archè', principle) our reasoning.

Bibl. sample : *W. Klever, An epistemological mistake?,* in: J. van Rijen. et al, Aristotle (his meaning for the world today), Baarn, Wereldv., 1979. 38/47.

In passing: Aristotle's logic as a systematization of the types of reasoning enjoys today renewed appreciation". (*G.-G. Granger, Le théorie aristotélicienne de le science),* (The Aristotelian theory of science), Paris, Aubier, 1978, 5).

Note - Aristotle situates his 'analutica', analytics in a broader framework in which he also deals with non-rigorous logical reasoning and proceeding.

a. *Dialectic.* In Aristotle's language, this is the theory concerning those judgments that elicit both arguments for and arguments against. As such, they are probable or true - with reservations. - In this sense Aristotle issued: Peri sophistikon elenchon (On fallacious reasoning, also called 'sophisms').

b. *Rhetoric*. - This is, in Aristotle's language, the theory concerning neither analytic (strictly logical or, as he says, "scientifically irrefutable" (apodictic)) nor dialectic (provoking contradictory propositions) statements. This type of statements is nevertheless very frequent: one tries to 'persuade' one's fellow man to come to some type of understanding. 'Linguistics' or 'eloquence' are good translations of 'rhetoric'. Also in mere rhetoric 'reasoning but not logically strict but to achieve some predetermined goal, namely to get someone (a single person, an audience (in the courtroom, in the agora (public assembly). in the auditorium) to put forward their own opinion. Preferably with logically strict, but if necessary with purely dialectical (contradictory) arguments, or with arguments based on feelings (which sometimes have little to do with thinking).

As an aside, rhetoric is found today primarily in (deceptive or serious) advertising practices (communication theory).

Second sample. - concept-theory. (09/12)

First ‘stoicheion’ element concerning logic, is the concept. -- We define the concept or ‘idea, (‘mental representation’).

1. *Ontological definition.*

‘Ontology’ is theory concerning reality (theory of reality). Sometimes one also says ‘metaphysics’ - ‘Real’ is, in ontological parlance, “all that is non-nothing”. A concoction (I’m dreaming), a night dream content (I dreamed I was walking around in my shirt), a daydream (I’m dreaming of my fiancé), or simply an assumption (I assume that too little sleep is the cause (‘‘reason, or ‘ground’) of one of my students failing), - all that is non-nothing. Thus “something,” and thus “reality. - So do not confuse everyday language regarding the term ‘reality’ with strict ontological or reality doctrinal language.

As an aside: The Ancient Greeks spoke of ‘being’ (all that is). ‘On - tos’ (being) in Greek gave rise to ‘ontology’

The concept.

In logic, the term “understanding” is defined as follows,

a. *In the language of Eleates* (Parmenides, Zenon):

1. being**2** , insofar as it is present in the mind (nous, intellectus). - Cfr. Silvio Senn, *An sich (Skisse zu einer Begriffsgeschichte)*, (in: *Philosophica Gandensia*, New Series 10 (1972): 80/96, The author emphasizes that from Parmenides’ Poem of Doctrine, (8:29) the reality or objectivity, is the major, yes, the only commitment once thought is present. In Parmenides’ language, “Being (...) keitai kath’ heauto” (Being is provable in itself). In German “an sich”. Parmenidean: “according to itself” (understood as “not according to us”).

Now it is evidently so that, when we **a.** cherish a concept (representation) of ‘being’ (something, not-nothing) **b.** this is both according to that being and according to us! But one can still try to be ‘objective’ and think according to reality. Not only according to ourselves!

b. *In our present language:*

An ‘understanding’ is “all that one given (‘object’) reflects something, effect) in our mind”. Being insofar as depicted in our mind. Insofar as reality appears in our mind, there is understanding and therefore comprehension of that reality.

2. Harmological definition.

'Harmozo', I put together, 'Harmonia', manner in which something is put together (and, at once, can be disassembled). 'Harmonikos'; in a way that testifies to good putting together,-- Behold what 'harmology' means: the theory concerning the putting together and the way in which something is put together. - In its logical application, 'harmology' in Antique Greek is called, 'stoicheios' i.e. the logical form of joining and interlocking.

Appl. model.

One who wants to 'know' (understand, comprehend) a water clock, disassembles it and, afterwards, reassembles it with logical understanding of 'water clock'. That is 'stoicheiosis', factor or element and component analysis. Tracing the parameters necessary to bring the water clock to 'reality', to 'realize' (here: to make).

The stoicheia, elements of understanding.

So how to break down a concept to know how it is put together? As follows. A concept, when analyzed by factors, exhibits two stoicheia, presuppositional parameters, its content and its scope (range). In scholastic-medieval Latin, 'comprehesio' (concept content) and 'extensio' (concept scope).

1. ***The conceptual content.***

That comes down to what our mind knows and thinks about a given (being): e.g. 'girl', 'beautiful girl'. These are two distinct contents of knowledge and thought, although they are interrelated. Although, in reality, they cannot be separated, they can be distinguished. - ***Note*** - Ch, Peirce speaks here of 'thought content'.

2. ***The scope of concepts.***

That is the set and/or system (system) whose conceptual content can be "asserted" (expressing an assertion), "said out" (saying something about something) - For example: "Anneke, Liesje and Monika are girls". The content 'strikes' at that of which it is the comprehensible representation. -- Or still: the scope of a concept is all that is such that its conceptual content can be verified (found to be true),.

Summary:

Content and scope are exactly represented in the expression "all that (girl) is" . "All that . is" refers to the scope or range. The text within that expression "..." refers to the content.

Plurality/ unity.

'Hen' in Ancient Greek means 'one', 'Henology' is therefore 'unity theory'. The theory concerning all that is one.

In the multiplicity, of girls (extent), the conceptual content is the unity. - In a twofold sense, there is unity-in-quantity.

a. *Collective Theory.*

The words "all that ... is" denote the collection to which the term, as content, refers. The words 'girl' (in "all that is girl") denote the common property by which the collection achieves its unity (all (possible) copies of it are identical as far as the property 'girl, is concerned).

b. *System Learning.*

Take the term "all that is Flanders. - The words "all that ... is" indicate the system (coherent whole or totality). In particular: 'Flanders' indicates the Flemish population in its landscape. In the multitude of the Flemings (elements of the collection of 'Flemings') and especially in the multitude of parts of the Flemish landscape (from West-Flanders to Limburg) (parts of the one landscape) the unity is the conceptual content of 'Flanders'. In other words, 'Flanders' is that common characteristic which reflects the cohesion.

The ratio of stoicheia (content / size).

The richer the content the poorer the size. The poorer the content the richer the scope.

Appl. model.

The content 'girl' refers to (many) more girls than the content 'pretty girl' (in other words, there are (many) more girls than there are pretty girls).

Appl. model.

The tree diagram of Porphyrios of Turos (Porphyrius of Tyre (233/305)).-- The Alexandrian Neoplatonic thinker Porphyrios is known for his classification (increasing content, decreasing size). Being (reality) is divisible into material and immaterial (purely spiritual) being. (Material (material) being decays into inorganic and organic (living) being. Living being is divisible into vegetable and animal being. Animal being is either spiritless being (the mere animal) or spirit-gifted being (man).

As an aside, the richest extent is "the genus" (= universal collection); the less rich extent "the species" (= Private collection). 'Being' (reality) is all-encompassing or transcendental collection, i.e. the genus that includes everything.

Kant: "Concepts without 'content,' i.e., in Kantian parlance size (copies) are empty. Copies without concepts are blind. In other words: an extent without a unifying conceptual content is 'blind'. A conceptual content without a sample from the multiplicity of copies is 'empty'. A general rule lives when there are examples.

Without concept content blind, without concept scope empty.
Take a concrete example.

Bibl. sample : H. Marrou, *Histoire de l' éducation dans l' antiquité*, (History of education in antiquity,), Paris, 1948, 239. - The students, after reading a muthos, narratio, story, an 'epangelia' had to make a report. A papyrus (papyrus Fayoum) has left us such a student report.

Given: The teacher apparently recounts a myth in verse.
Asked: The student gives a "paraphrasis" (a paraphrase).

The preserved text: "A boy who had murdered his father and "feared the legislation on parricide, fled into the desert." (*Note:* a quote (citation) from what was read aloud). - As he passed through the mountain range, he was chased by a lion. With that lion at his heels, he climbed a tree. - Then he saw "a dragon" (snake) rushing towards his tree to ... possibly climb it too. (...). While he was fleeing from that 'dragon' he took a fall.- - The malefactor does not escape a deity: The deity will bring the malefactor to justice". (*Note:* apparently again a literal citation)". So much for the story.

Now we pay attention to the structure (i.e., the way the concept of a deity's punishment of an evil person).

That structure is twofold:
a. There is the narrative that counts as a sample from all possible cases (specimens) of judgment (understand: punishment judgment) by a deity after an unscrupulous act. This is a specimen from the collection of "punishment by deities of evil deeds". Thus, through one singular case, the scope of understanding becomes clear.

b. There is, however, also what is called the moral lesson, understand: the conceptual content which summarizes the phases of the story in one sentence: "The deity will sue the evil one". You see: without the story (i.e. a grasp of the scope) the conceptual content is 'empty' (i.e. concerning data which verify, blur); without the moral lesson (i.e. the content) the story is 'blind' (i.e. one does not grasp the (main) idea).

Note*:* The word or words that express a concept in language is called the term. So e.g. 'pretty girl' is the term (= words) for what we think in our mind. That is the speaking and writing term.

Third sample. - Judgmental theory : (quantity / quality). (13/15)

O. Willmann Abriss, 52ff. (*Des einfachen Denkformen: Begriff und Urteil*), (Of the simple forms of thought: Concept and judgment), 72ff. (*Urteilsklassen*), 80ff. (*Das Urteil als Form des diskursiven Denkens*), (Judgment as a form of discursive thought),), makes it clear that Platon, when he claims that all thinking is judging, is talking about purely discursive thinking, in which apparently intuitive thinking is paramount.

a. ‘***Beholding’ (‘intuitive’).***

Contemplative is our thinking when it grasps concepts, (using the term “contemplative” not in the sensory but in the intellectual or “intellectual” sense),

b. ‘***Explaining’ (‘discursive’)***

Expounding is our thinking - precisely the same thinking when it articulates concepts and relations between concepts in a ‘discourse’, language speech, ‘exposition’.-- - As one concept, if need be, is set forth in a multitude of words (= the term of that concept), so too is judgment of the same structure.

The proposition (statement, assertion, sentence).

What the term is for the understanding, that is the proposition or statement for the judgment we make in our minds purely intellectually. The judgment phrase - the correct translation for “proposition” - is the linguistic articulation of the judgment in our minds.

The “name” (subject) and the “verb” (predicate).

Bibl. sample :

-- A Gödeckemayer, *Platon*, Munich, 1922, 127ff.;

-- J.B. Rieffert, *Logik*, Berlin, 1925, 27.

-- A. Maté, *Critical study (Platon’s semantic Lehre*, in: Journal of Philosophy, 51 (1989) 14 (December), 696/7021.

-- L.M. de Rijk, *Plato’ s Sophist (A Philosphical Commentary*), Amsterdam, 1986;

-- G. Prauss, *Platon und der logische Eleatismus*, Berlin, 1966;

-- A. Rivier, *Etudes de littérature grecque*, (Greek Literature Studies), Geneva, Dros, 1975, 292.

River notes that Pindaros of Kunoskefalai (-518/-438), the famous lyric poet, conceives a sentence of judgment as follows: the ‘onoma’ (name, subject)-usually a noun-is central: it is the present reality that is being judged. The ‘rhèma’ (verb, proverb)-which is sometimes missing-is an auxiliary expression, namely a ‘model’ (= information) that illuminates, explains, gets to know the subject better.-remember this well.

Platon’s doctrine of judgment.

A ‘logos’ (= judgment) includes a subject (‘onoma’ Lat.: nomen) from which a predicate (‘rhèma’, Lat.: verbum) is pronounced.

Ontological definition of judgment

First-rate is ‘to pragma’, the given, i.e. the reality (‘being’).

1. The name calls the reality to be judged “by its name” such that it comes directly before our mind, - albeit through (through) its name. As the concept **a.** is reality **b. insofar as it is** present in our mind, so the name in the context of judging.

2. The verb or, better, proverb - ‘rhèma’ is ‘all that is said’ (the sentence) - illuminates, through models (understand: intelligence, information), through the subject, the name, ‘to pragma’, the given by its name,

Aristotle. - *Ch. Lahr, Logique*, 501, says: “Judgment consists in saying something out of something - “katagorein ti tinos” (in Aristotle’s language) -- That about which something is asserted is the subject; that which is asserted is the predicate. In Chomsky’s language: the nominal and the verbal component.

The structure of the sentence.

How to break up the sentence so that we see how it is put together? That is ‘stoicheios’ or factor analysis, which reveals the structure. By ‘structure’ one then understands:

a. the parameters (elements) and **b.** the relations between them. So that ‘stoicheiosis’ amounts to structural analysis.

The quantity or how big the judgment is”.

As a factor of judgment, the subject determines the size.

a. Transcendental.--”Being is all that is real anyway” is a phrase that applies to everything, because everything is real (outside of which there is absolutely nothing).

b. Categorical.

1. Singular (individual, singular, single, unique) judgment: ‘Just one, bird was observed in the forest’.

2. Private (specific, species) judgment “Some birds exhibit a period of migration”.

3. Universal (general, generic): “All birds by definition have wings”. Or still: “All possible birds ...”

The quality or capacity of the judgment,

1. If the saying goes along with the subject without fail, then there is affirmative, (affirmative judgment.

2. If the saying does not go with the subject, then in negation (ignoring) judgment,

3. If there is confirmation or denial with reservations, then the judgment is restrictive (limiting).

Applicable model.

J.H. Walgrave, O.P., Is Christianity a humanism?", in: *Cultural Life* 1974: 2 (February), 147/156. - The author says: to that question, logically speaking, three answers are possible.

1. Christianity is a humanism. - Which includes : "All (possible) Christianity IS one humanism" (universal, affirmative).

2. Christianity is not a humanism. - Universee1 and denial judgment.

3. Christianity is in one sense, in another sense not a humanism. - Partly affirming partly denying is the "saying" here, because of affirms or denies with reservations.

Immediately one judgement (affirmative e.g.) refers to the opposite (negative), - what is called 'dialectical' (cfr. *E.D. 08* (*Both arguments for and arguments against*).

Note: It is evident that the answer depends on how one defines (interprets) the two terms being compared. Those who interpret Christianity as 'secular' (secularized) will call Christianity a humanism (a thing of mere names). Those who interpret Christianity as 'sacred', however, will call Christianity anything but 'humanism' (a matter of mere earthly people), of course.

The unsightly word "not.

There is denying and denying.

1.*Transcendental (comprehensive. ontological).*

"A round square is not". Which here means "is absurd (incongruous, impossible)".

2. *Categorical*.

a. Contrary (simply opposite): "White is not black or red". (mental: "when one compares).

b. Correlative (mutually involved): "The father is not the son" (mental: "though neither is without the other").

c. Privileged (deprivation expressing): "That man is out of place because he is a shameless cynic" (mentally "the norm or even the ideal would be for him to know shame").

Platonism and restrictive judgments.

"Like all his propositions (= judgments), (said propositions) have no more than limited validity. Thus Platon speaks in the *Faidon*" (C. de Vries, *Plato's image of man*, in: Tijdschr.v.Philos. 15 (1053) 13, 430; also 437).

Calls Platon the body, with the Orphics, "a prison," he says elsewhere that the same body is "a possession for which man ought to be grateful as he should be grateful for deities and souls." Reading Platon well involves thinking about the restrictiveness of his statements.

Fourth sample. -- Judgmental theory 2 (identitivity). (16/18)

We now turn our attention to what, in the concepts, gives rise to judgments. For this we rely on *G. Jacoby, Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung,* (Logisticians' claims on logic and its historiography), Stuttgart, 1962. The author says, in brief, what follows.

The traditional, strictly philosophical (i.e. non-mathematical) logic and its application, i.e. Methodology (theory of methods), puts first:

a. Realities - "effects" he says,

b. Insofar as they are identitive, "Identitive" is twofold, Either totally identical or part-identical (= analogous),

1. -- *Total identity.*

a. *'a = a' or 'if a, then a'.* -- The first a is subject, the second saying in 'a = a'. a is identically without more (= totally identically) with itself. Consequence: 'if a, then a' (whenever a is there, then a is there).

b. "Man is an animal gifted with spirit." -- This counts as a creature definition of "human. Consequence: "if human, then animal gifted with spirit"! -- and conversely, "If spirit-gifted animal, then human" (as "a = a", conversely, gives "a = a" and "if a, then a", conversely rewritten, also gives "If a, then a").

Where there is total or overall identity, there is reversibility, for something totally coincides with itself and not with the rest. By this dichotomy (complementation), 'a and the rest', "man and the rest", one can separate a and man from the rest and define them in their being forms.

2. -- *Partial identity (= analogy).*

a. *Type 1.-* "Jan is a pupil of our district school" By characterizing (defining) him in this way, one classifies Jan in the class (collection) of all that is as a common characteristic, "pupil of our district school".

We call this "metaphorical analogy or partial identity". As a "pupil of our district school", Jan is identical with all other "pupils of our district school". But that identity or identifiability is partial, partial.

b. *Type 2.* "Jan comes home in a moment". By typifying him in this way, one situates Jan in the class of "all that comes home just like that". He "is" one instance of all that comes home in a moment.

This time 'is', (the auxiliary verb 'to be') was not present in the first sentence, Yet this auxiliary verb stuck in it, hidden. Which is evident from the rewriting that 'is' exhibits,--

Yet this is also a metaphorical identity, for it classifies John in a collection as a member or ‘copy’ (the term is Platonic, - ‘eikon’, which one translates rather incorrectly by ‘image’).

2. *Bis. - Partial identity (= analogy).*

Situate another type of analogy: you have family living in Leuven; you invite them to the local fair; you see them arrive and say, “Leuven is over there.”

Here there is partial identity or analogy between “family” and “Leuven,” simply because she lives in Leuven as a territory. Thou art part-identifying the total territory with, we say four inhabitants of it. The whole and the part are part-identical with each other.

The background - prepositions, stoiocheion - is here the system or coherent whole that is Leuven and from which you partially isolate four inhabitants (without completely isolating them from it). - The auxiliary verb ‘to be’ is also very useful here: it expresses not only metaphorical or collection doctrine but also metonymic or systemic partial identity.

Note: Now reread *E.D. 10v*., (Plurality/Unity): from this it is clear that the auxiliary verb ‘to be’ represents the partial unity between more than one given or ‘being’.

As an aside, this dual identity type, metaphorical and metonymical, is anciently known doctrine. The medieval Scholastics (800/1450) called this “totum logicum” (all human beings) (logical whole) and “totum physicum” (all human beings) (physical whole). The common property in the first case is “distributive” (spread over a multitude of single individuals) and in the second case “collective” (joint).

Conclusion: Judgment is based on identities, total (tautological and definitional) or partial. Something is either totally identical with itself or partially identical (analogous) with something else. One might as well say : “totally one with itself or partially one with something else”.

Immediately we know what, in the concepts within a judgment, gives rise to that judgment, namely, their total or partial identity .

Reality, coming to understanding in our minds insofar as totally identical with itself or partially identical with something else, is the reason or ground of judgment (especially in its quality, i.e. affirmation, denial (when the identity is not there) or restriction (when there is for and against)).

The comparative or comparative nature of any judgment.

The reason or ground of the quality of any judgment is identitive. But what is the reason or ground of recognizing that it is so? Answer: the explicit or secret comparison.

Cfr. Ch. Lahr, Logique, 226s. (*Le jugement et la comparaison*).

1. *All logicians admit* that a portion of judgments exhibit comparative basis, viz. where the judgmental person consciously and thoughtfully compares and recognizes the total or partial identity (unity) of the data named by him - subject - and the saying.

2. ***Not all logicians agree*** that even judgments where the comparison goes on unthinkingly ("spontaneously"), in an unspoken way, presuppose comparison.

2.a. Thomas Reid (1710/1796); top figure of English anti-rationalist commonsense philosophy),- Victor Cousin (1792/1887: Eclectic thinker) et al. claim that the unthinking judgments only allow a conceptual comparison in retrospect.

Phrases like "I exist", "I suffer", - "It is cold", "The snow is white" etc., arise before, the one who thinks or utters them, reasons. Something like "I, compared to 'exist', encompass that) I exist. Or, "The weather, compared to cold, involves that) 'it is old'.

Note : Fallacy: One identifies "explicit reasoning comparison" with "all comparison", the non-explicit, purely intuitive included. There is, after all, non-discursive reasoning and comparing.

2.b. *Aristotle and, with him, a whole series of logicians of antiquity*,

- Antoine Arnauld (le Grand; 1612/1894) and Pierre Nicole (1623/1895), the drafters of *Logique ou Art de penser* (Logic or Art of thinking), (1862; work reflecting Descartes', mind);
- John Locke (1632/1704; founder of the Anglo-Saxon Enlightenment),
- Paul Janet (1823/1891; Spiritualist thinker).

They all claim that even the unconsidered comparative judgments are really comparatively founded. Says e.g. Locke: "A judgment is the sensation of a relation either of fitting together or of not fitting together (*note*: the affirmative and the negative judgments) of two 'ideas' (in Locke's parlance: contents of consciousness) which have already been observed and compared among themselves."

Conclusion: -- The discussion hinges on whether or not to adopt purely intuitive and thus unthinking quick comparisons of thought content.

Fifth sample. -- Judgmental Theory 3 (model use). (19/21)

Ontological: reality, - semiotic (= sign theoretic): reality called by its proper name, -- in the saying by a model, - this is what judging is. Therefore model theory in a nutshell.

"***Speaking about something (original) in terms of something else"*** (model).

Example. -- The measurement model. -- You are traveling through Haute Savoie and, with your fiancée, arrive in the tourist town of Chamonix. You sit down on the terrace of a restaurant facing Mont Blanc -- right in front of it, in the heights. You say "Now that is Mont Blanc, a mountain of over four thousand meters".

Thou speakest -- judgest -- of that mountain in the high Alps "in terms of meters". The meter here is a measure, -- which thou dost use here as a "model" to provide information about Mont Blanc. - A meter does not resemble a mountain, but he is a measure of a mountain. As such, it is part of the whole (system) that is the mountain. The entire height of the mountain is explained through parts,- meters. To speak in terms of parts about a whole (system) is to speak metonymically or systematically. In other words: the meter is a metonymic model of e.g. (the height of) a mountain.

The unknown (O), here the height of Mont Blanc, is explained by the known (B), here the meter.

Speaking about the unknown (O) in terms of the known (B) is model usage. - Every judgment contains a subject (O, the original) and speaks in terms of something known (B, the model) about that subject. - Behold the model theory applied to the judgment act.

Applicative and regulatory model.

a. ***Applicative (singularizing, particularizing) model***.

When a conceptual content (O) is illuminated by one (singularization) or more (particularization) instances from the conceptual scope (B), then there is "applicative model".

The general or universal rule (common property) of the conceptual content, which is "empty" (*E.O. 12*), i.e. "unknown" (at least in part), is clarified by its "applications", i.e. the applicative or applicable models.

That 'information' is always some partial identity (*E.D. 16*): "Analogy is the linchpin of the model concept" (K. Bertels / D. Nauta, *Introduction to the model concept*, 1969, 31).

Reread now. *E.D. 12*, the ‘muthos’ (story) : the elements “parricide, flight into the desert, trek through mountain range, lion, snake, tree, fall are incidental (‘accidental’) elements. Why? Because they can be replaced by “murder of a mother, flight through the suburbs of a city, encounter with a primeval enemy, death by the same enemy”. But the elements “crime, intervention of some god or goddess, downfall or at least great harm” are decisive (‘substantial’), because they make up “the substance,” the essential.

Now notice: by constructing a parallel story but with the same ground structure ((‘substance’), we illustrate the conceptual content of ‘divine judgment’ (which means ‘the fact that a deity intervenes in response to a crime’). ‘Illustrate’ includes; “by applications, - here two - clarify” (as we said above).”

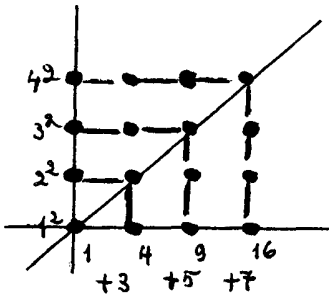
b. ***Regulative model***. -- This is a universal, generalized model. -- When one (singular) or more (private) instances from a concept scope (O) are illuminated by the corresponding concept content (B), then there is a regulative (illuminating all its uses) model.

Note -- What is called “theoretical model” - this is a theory that explains data, is of that type. -- The term “divine judgment” (= after crime a deity who punishes) is such a regulative model, because it gives the general rule for the applications or “illustrations” (“cases”). This is: one rule for many applications.

Mathematical model.-- Logic and mathematics are never far apart. Therefore, a digression.

Bibl. sample *: D. Nauta, Logic and model*, Bussum, 1970, 26 (*Square numbers*). - We know the number mathematical formula: “ 1 x 1, 2 x 2, 3 x 3, ...” (Or ; 1^2, 2^2, 3^2, n^2)....

Well, the Paleopythagoreans (founder: Puthagoras of Samos (-580/-500)) ‘translated’ this into space mathematical figures. Such a translation is ‘a model’. They provide,



Indeed, information about the numbers represented by it. The drawing shows the laying of the cobblestones that the masters of the time showed to the pupils in order to ‘illustrate’ (here: by clarifying space-mathematical information) the concept of the square. - A wonderful case of ‘model building’

.

Similarity model/relationship model. - Something can be modeled and thus illustrate or provide information in at least two ways. - We clarify this using a judgment, “This is Antwerp.”

1. - *Iconic or likeness model.*

‘Eikon’ in ancient Greek, means, among other things, ‘picture’, ‘representation’, ‘imitation’. Thus, a photograph of someone is an iconic model.

To the point: you live in Ghent, but during your trip in the US you met your fiancée. She wants to get to know Antwerp. You take her to Deurne Airport, take a plane there and fly over Antwerp. Once in the air you say: “This is Antwerp now”. That is one type of acquaintance.

But thou bring out a city plan and compare with what thou seest. The similarity is striking: the structural identity betrays that it is indeed a representation of Antwerp. On paper, the structure of the elements that make up Antwerp - always stoicheiosis - was imitated. - That map is a parable model (= metaphorical model): of that map one can say: “This is Antwerp” (a judgement that is similar to the one just now.

2. - *Deictic (= indicative) model.*

‘Deiknumi’, in Ancient Greek means ‘I show’, ‘I indicate’, ‘I refer to’. - You guide your fiancée along the Meir with all its stores and banks and its bustling city life. And you say, “This is Antwerp”.

It is so clear that what is at play here is not similarity but coherence: the Meir is a part (a hypo or subsystem) of the whole (system) that is Antwerp. That sample in Antwerp is a metonymic model. Here too information is provided about Antwerp but of a different nature. The Meir is a (metonymic) model, a (coherence) model.

Conclusion:

1. Through a city plan (B, the known) you provide your fiancé from America with an understanding (= information) of Antwerp (O, the unknown). The city plan is a model.

2. Via a trip along the Meir (B, the known) you provide your fiancée with an understanding (= information) about Antwerp (O, the unknown). Both concepts - which are only partially the same but complement each other - you establish in a judgment: “This is Antwerp”. Ontological: the reality that is Antwerp; logical, represented in the name “This”, is illuminated by a dual model (city plan, Meir).

Sixth sample. - Judgmental doctrine 4 (interpretation) (20/24)

It strikes everyone: Aristotle titles his doctrine of judgment with the term "hermèneia. It means:

a. the articulation, in language, of conceptions;

b. the promotion of ideas

c. translating (and acting as an interpreter) conceptions. Behind all that is one meaning or concept: interpretation, interpretation.

Also: P. Ricoeur, *le conflit des interprétations (Essais d 'hermineutique*). (the conflict of interpretations (Essays of hermineutics)). Paris. 1988. 8, says : "To the extent that a judgment of something says something," it is an interpretation.

In all this, it is also notable that most logicians omit one term from the structure of overall judgment: a judgment is always and everywhere the fact that **a**. *is said* about something **b.** by someone (the subject who judges) **c.** something is said. Clarity reflects, then, the one who interprets.

In other words: in the interpretation or judgment, the thinking subject, the person and even the personality in that person, is recognizable. 'pictured'. Or still: the judgment is a model of the one who judges. - That is what we are explaining now: how to explain the judgment so that we see how it is put together with regard to one very important factor or parameter, the subject. that too is philosophical logic.

Hermeneutics.

'Hermeneutics' is theory of interpretation.

Bibl. sample : *H. Arvon, La philosophie allemande. Paris. 1970, 116/120 (L 'hermeneutique*).

1. Arvon says that "hermeneutics" was first of all an auxiliary science of theologians or jurists in interpreting texts (Bible, legal texts). In particular : to apply an old text in a new context (situation) is not to take that text literally but to fit it into the new situation. Without betraying the 'substance' (*E.D. 20*), i.e. the essential without all that is incidental. This amounts to actualizing interpretation or reestablishing interpretation (E.*D. 05*).

2. Until when *Fr. D. Schleiermacher* (1768/1834) in his *Dialectics*, transforms - redesigns, re-founds - hermeneutics into a theory of knowledge, all knowing is indicating data (reality).

So that we can say: seen in Schleiermacher's line, judging is

a. reality,

b. named in its name (the subject), denote in some saying, but in such a way that the one who judges and his (contemporary) situation are taken into account.

The ABC Theory.

Bibl. sample : *A. Ellis/ E. Sagarin, Nymphomania (A study of the hypersexual woman*), Amsterdam, 1965, 137vv..

These two psychiatrists, owing to dealing with hypersexual women ("who are driven from one bed-and-husband to another bed-and-husband"), decided on a theory (a summary "theoretical" model).

The structure of (psychiatric) interpretation.

We put "psychiatric" in parentheses because it is not part of the substance but an afterthought.

a. ***Incentive/ Response.***

This psychological scheme (= model) sticks out in the background: A (the reality in itself), B (the person with his own personality, C (the interpretation). One sees that the stimulus (stimulus) is A and that the reaction (response) is B - and - C.

b. ***Abc theory.***

A is the mysterious fact or "something" in reality that acts on the hypersexual or nymphomaniac woman as a stimulus.

B is the set of presuppositions (elements, factors, parameters) that make up the personality of the woman in question (and that help influence the answer).

C is the final response to A. This response or "answer" expresses itself in judgment, betraying the typical or characteristic (specific, distinctive) of the nymphomaniacal judgment.

Summarized in logical form : "if a and b, then c (understandable)".

We explain briefly.

A. -- "I went through a very painful experience regarding sexual life" (we think of frigidity e.g.). This is the reality.

B.1. The healthy response. - "I will always regret A. Yet I can handle such a thing, in time, for sure".

C.1. The mentally-psychically sound judgment. - "I have, with my common sense, kept my inner peace".

B.2. The neurotic (deranged) response. - "I will always regret A, because I can never cope with such a thing (whoever is below his organic level is a failure(s))".

C.2. "I fall out in fierce outbursts of mind (comma, dejection, anger, lamentation and self-pity) in throwing myself from one bed-and-man into another bed-and-man". The latter is then the mentally-psychically unhealthy, "neurotic" judgment,

One sees it: the difference, psychologically, between common sense and neurosis (nervous disease) is located, according to said psychiatrists, first and foremost (not only) in the processing subject; it manifests itself in the distinguishable judgment.

'Phrases'

Ellis/ Sagarin speak of basic judgements which we call 'sentences'. An example: "One should be, in all possible respects, thoroughly competent, adapted and above all successful in order to be able to refer to oneself as a 'valuable human being'." That is "perfectionism.

Which amounts to "all that is, practically unattainable". That unfeasibility provokes unsuccessful attempts which ... nails the impression, deep in the soul, that one is "born for misfortune, failure," so to speak.

Such judgments Ellis and Sagerin see at work in the depths of the soul of e.g., self-destructive nymphomaniac women. We do say "at work," because those phrases like "I am a failure" or something like that (short are those basic phrases always) are like powerful energies that act destructively. Among other things and especially on the judgment, the mind. They appear with the regularity of a clock in the mind of neurotic people and destroy all "positive" (i.e. imagining a favorable fate) thinking.

View structure:

a. reality, viz. I, **b.** referred to by her name 'I'. **c.** referred to as a 'failure woman'. This is one type of doomsday thinking.

Mental restriction (inner reservation).

The term "inner reservation" (mental restriction) has two meanings. In the strict sense "I speak in such a way that my fellow men (s) do not understand me as I mean it in my inner self". In the broad sense: "I speak in such a way that my fellow men understand me only if they pay close attention to some elements in the situation in which I am speaking now." An everyday example: "Sir is not at home". Everyone knows that this probably means that he will not or cannot receive now. The maid says this because she was ordered to shield her gentleman (with or without reason).

Now pay attention to neurotics / neuroticae.

a. They are deluding themselves (according to Ellis and Sagarin). Thus, when they say "I was born for misfortune" or "I always fail anyway," that sentence is accompanied, inwardly, by an inner meta-language (language about what they are saying): "I do know that I am deluding myself about this."

b. At the same time, another phrase echoes in that same interior, "Ye know well that ye delude yourselves."

1. is "not wanting to know" and

2. is the language, - better: the meta-language - of true conscience. Way out: wanting to know what the true conscience inspires.

Seventh sample. - Reasoning theory 1 (hypothetical sentence) (25/28)

We explain logical reasoning ... in order to see how it is put together (stoicheiosis, element analysis). - As *G. Jacoby*, *Die Ansprüche*, 10, says: logic begins by describing what is logical (in his German: 'folgerecht' which means rightly following from something). Behind that 'logical' there is (apparent or hidden) reasoning, behind that reasoning there is either total or partial identity of realities expressed in concepts ('being'). After all we said above, what Jacoby says should be abundantly clear.

The categorical and the hypothetical judgment.

The categorical sense says of something, something out in an unconditional or 'categorical' way. For example, "1 + 3 = 4". - The hypothetical or conditional sentence says of something in a conditional way: "If 1 + 3 or 3 + 1 or 2 + 2, then 4". Hypothetical sentences can be tacitly assumed and take the form of restrictive-categorical judgment: "in that case I will come". Which actually means, "If that case occurs, then I will come".

The entailment (implication).

The basis of encompassing is total or partial identity. Cfr. E.*D. 16*.

Total Identity:

"Something encompasses (implies) totally itself," because it coincides with itself.

Partial Identity:

"Something partially encompasses something else because it at most partially coincides with it.

The denied enclosure:

'Something does not (utterly) entail or imply something else, because no identity is detectable. - Jacoby is thus right.

"Own to, inherent to.

Encompassment can be viewed in reverse. - "Something encompasses (totally, partially, not at all) something (else)". This is put another way; "It is inherent in (inherent in) the second something (else) to put the first before it". - More concretely; "If it rains, then the things that are sprinkled become wet". "Raining implies that sprinkled things become wet". "It is inherent in or inherent in sprinkling things that they get wet".

Conclusion: - Immediately it becomes clear that the conditional or hypothetical sentence is nothing more than another linguistic expression of implication or entailment (and of "own or inherent to").

Pre-sentence / post-sentence.

Ch. Lahr, *Logique*, 509, defines the hypothetical sentence - and immediately any reasoning worthy of the name - as follows: "The thinking operation which consists in it:

a. from one or more prepositional phrases (Greek: 'pratasis', Lat. praemissa)

b. to infer logically one or more after-phrases (Gr.: apodosis, Lat.: consequentia), is reasoning." -

The principle of (necessary and/or sufficient) reason or ground.

The prepositional phrase expresses the 'condition' under which the postpositional phrase is valid, logically justifiable, justifiably derivable. In Platonic language, the preposition is called 'hupothesis', Lat.: suppositio, i.e. preposition. Logic, in the Platonic sense, is therefore "deducing from hypotheses". - One sees at once that the prepositional phrase is the reason or ground of the postpositional phrase.

This reason or ground may be twofold.

a. necessary reason. - For example, love play or artificial insemination is a necessary condition for fertilization. But there is more.

b. Sufficient reason. - For example, love play is merely necessary but not a sufficient condition or reason: the sperm cell must fertilize the egg.

Deduction/Reduction.

Since Platon (and perhaps before him), it is clear that reasoning can go in two fundamental directions.

Bibl. sample :

-- *W. Klever*, *Dialectical Thinking*, Bussum, 1981, 43/48 (The State);

-- *Alexius Meinong* (1853/1927) Austrian School), *Ueber Annahnen*, (About approach,), Leipzig, 1910-2.

-- *N. Rescher, Hypothetical Reasening*, Amsterdam, 1984.

According to P1aton, there are two main types of reasoning.

1. ***The first is called forward or progressive reasoning,***

In Platonic Greek: 'sunthesis', Lat.: deductio, deduction. - With W. St. Jevons (1835/1862) and especially with *Jan Lukasiewicz* (1878/1950; e.g., his *Aristotle's Syllogistic* (1951)), this reasoning can be schematized into - what is called - a concluding statement (syllogism) as follows: "If A (preface, reason), then B (posthesis, inference). Well, A, therefore B". -- Or still : "If A, then B and if A, then B".

The second formulation is purely conditional and does a better job of showing that the third sentence of the syllogism is derivable from the two prepositional sentences (follows logically from them).

Appl. model. - "If our Mieke studies well, she succeeds. Well, our Mieke studies well. So she succeeds". That is the categorical form.

Note: This categorical 'design' (that's all it is) is logically just another form of the hypothetical formulation that follows: "If our Mieke studies well, then she succeeds AND if, she (in fact) studies well, then she succeeds". The second 'then' is the logical consequence of the two 'ifs'.

2. *The second form of reasoning that Platon envisions is backward or regressive reasoning,*

In Platonic Greek: 'analusis', Lat.: reductio, reduction. - Here is the scheme according to Jevons - Lukasiewics: "If A (preface), then B (postline). Well, B. So A". - - Or hypothetically: "If A, then B and if B, then A".

Applicable model.

"If our Mieke studies well, she succeeds. Well, she succeeds. So she studies well". In other words: here the explanation (reason ground) is not presupposed as deduction does, but it is sought. - In the sciences and philosophy, this kind of thinking is called "the formation of a hypothesis" (which, of course, must be verified afterwards).

With regard to Platon, the founder par excellence of logical thinking, here is what Klever, o.c., 45, says : "There are thus (...) two ways of thinking (...). The point of departure (*op.:* premise, hypothesis) is, in both cases, the hypothesis (...).

(1) In the mathematics of the time - in particular Geometry - one would start from the presumption (...): one gives it the honor of an axiom (*note* : fixed premise) and guideline.

(2) In the Platonic dialectic, however, those hypotheses are only stepping stones to be able to move more in the direction of deeper principles (*note:* philosophical axiomata) and from those principles to either legitimize the initial hypotheses (*note:* e.g. of geometry) or to understand them as a moment (*note:* a movable element) of it."

Note: Klever (with Platon) wants to say the following:

(1) Mathematics then, as now, put forward as elements point, line, plane, body, - as axiomata (postulates). Sondes to wonder what that relies on.

(2) Platon, as a philosopher, seeks the prepositions of those geometrical axiomata.

(1) Subject science like geometry takes an axiomatic-deductive approach.

(2) Dialectics (understand: Platonic philosophy) proceeds backwards and does basic research (e.g. of the geometry of the time) (= reduction).

I. Kant (1724/1804; Enlightenment Criticism).

The terms "analytic" and "synthetic" have a meaning with Kant, the founder of the German Aufklärung, that comes across as very platonic when one looks at it thoroughly. He applies the systechy (pair, pair of opposites) "Analytic/synthetic" to judgments.

A. *Analytical judgment.*

Thus e.g. "Man is (by definition) a being endowed with reason" or "Every body is (by definition) extended". - We do say "by or definition," because in Kantian - analytic judgment the saying flows from the pure 'analysis' (= dwelling on the definition of the conceptual content) of the subject.

In other words: "If the subject (sufficiently logically examined for its definition), then (necessarily or not) the saying." -- Informational learning: actually one learns nothing in the analytical judgment, except: bringing out the aspects of the already known definition.

Note: -- The reasoning behind this judgment type is synthetic or deductive reasoning because one stays strictly within what is already known from which one deduces. Nothing more.

B. *Synthetic judgment.*

E.g., "The earth is round" or "After drinking the poison cup, Socrates died." -- Here the subject does not, in its definition, encompass the proverb. How then does one know that the proverb nevertheless belongs to that subject? Not by analysis of the definition of the mere content of the concept, but by examination of reality -- here: the earth and its geometric form, Socrates and the circumstances of his death.

Consequence: "If the subject (sufficiently examined by observation) then (non-necessarily) the saying". In the synthetic judgment one learns something; in particular: it records what observation - 'theory' Platon would say - teaches about the subject. In other words: such a judgment is not 'tautological' (as the analytic) but 'amplificative', (knowledge expanding).

Note: The reasoning contained in such an amplificational judgment is Platonically expressed as "analytic reasoning" (it takes the detour of observation).

Consequence: in Kant's use of language, Platonically generated terms appear in reverse!

As an aside: the definition-analytic judgment is deductive and therefore necessary (or, if negative, necessarily not): the observations 'synthesizing' judgment is non-necessary (understood: it does not necessarily flow from the subject concept,).

Eighth sample. - Reasoning theory 2 (capstone). (29/32)

Bibl. sample :

-- *Tae-Soo Lee, Die griechische Tradition der aristotelischen Syllogistik in der Spätantike*, (The Greek tradition of Aristotelian syllogistics in late antiquity,), Göttingen, 1984;

-- *G. Jacoby, Die Ahsprüche der Logistiker auf die Logik und ihre Geschichtschreibung, Stuttgart, 1962, 70/88 (Zu der logistischen Geschichtschreibung der antiken Logik*,-- esp. 73).

-- *Ch. Lahr, Logique*, Paris, 1933-27, 515/532 (*La déduction médiate: le syllogisme*),

-- *W.C. Salmon, Logic*, Englewood Cliffs, N,J., 1963, 37/47 (*Categorical Syllogisms*);

-- *J.M. Anderson / H.W. Johnstone, Natural Deduction (The Logical Basis of Axiom Systems*), Belmont (Cal.), Wadsworth, 1982.

'Sullogismos' closing sentence (syllogism) is a sentence that derives a noun phrase from two prepositions. - In Ancient Greek, the prepositional phrases are called 'protasis' or also 'lèmma' (Lat.: praemisse, sumptio) and the postpositional phrases 'sumperasma' or also 'epifora' (Lat.: conclusio. illatio). - Here it is so that the prepositional phrases are verbatim subordinate sentences and the postpositional phrase is the main clause.

Note: Lahr, o.c., 515: "A reasoning consisting of three sentences,---so arranged that from the first two sentences -- the premises (= prepositions) -- the third sentence -- the conclusion -- follows."

Lahr calls such a derivation "mediate" because it presupposes not a single prepositional phrase (as in the immediate or immediate derivation) but at least two prepositional phrases.

As an aside, the term 'derivation' can also be translated by 'inference', 'decision'.

Typology.

Sunthesis (= deduction). - "If A (= preposition), then B (= postposition). well A, therefore B". categorical formula). - "If A, then B ènd if A, then B (hypothetical formula-.

Analusis (reduction). - "If A, then B, Well B. So A." (categorical f.). - "If A, then B ènd if B, then A". (hypothetical f.).

As an aside, the hypothetical formula is the purely logical one (the categorical one is just a disguise (at least in pure logic)),

The basics: (partial) identity exposed by comparison.

Recall even *E.D. 16* (*Identity*). -- As in judgment (singular sentence) so also in reasoning (full sentence): the quality (affirmation/ negation -- reservation) and the quantity (universal/ private/ singular) betray the type of identity that links the concepts involved. As demonstrated *E.D. 28 ("analyl. / synth. Kant*.)).

Comparison.

- *F.J. Thonnard, A.A., Précis de philosophie*, Paris, 1950, 50, says: "The concluding argument (,...) is that kind of reasoning in which the mind agrees that if one compares two realities expressed in concepts with a third reality expressed in a concept, then these either go together or exclude each other. - The syllogism that affirms the merging is an affirmative, that syllogism that affirms the mutual exclusion is a negative syllogism."

Note : Note for a moment that Thonnerd does not mention the restrictive, caveat-containing syllogism. So e.g. the reductive.

Noted : *I. Bochenski. O.P.. Philosophical methods in modern science*, Utr./ Antw. 1961, 92 (Law and Rule), teaches us something important.

The derivation from the prepositional phrases can be laid down in a rule. - For example, the rule called "modus ponendo ponens" (since the Scholastic logicians). We have already applied this rule, without mentioning it explicitly, to the formula representing the "sunthesis" (deduction). There this rule offers no objections.

But in the analusis, the reduction, it is. In deduction, that rule is simply. Unconditionally (without reservation) valid; in the reduction conditionally, with reservation and thus restrictively (until when it is proven anyway that the hypothesis is valid).

Briefly:

a. a (logical or other) law expresses all that is (so or so): here: the encompassing or "if, then" connection (the derivation);

b. a (logical) rule expresses this in a (blind) formula that we can apply, as it were, without reasoning.

Diversion modalities.

The best-known 'modalities' (modes of being) are the triad "necessary (yes) or necessary not" and "non-necessary". One also says instead of "necessarily not" impossible and instead of "not-necessary", 'possible'. Each time the auxiliary verb 'to be' is included, of course: thus 'possible' is "all that" can be" and impossible" all that cannot be".

In the derivation, these terms refer to the quality of the derivation (affirmative or negative (necessary or necessarily not) or containing reservations (possible)).

An example. - John has not been learning very well for some time. You, as a teacher, say, "Perhaps, it is due to the fact that his parents separated." That is a veiled reductive reasoning.

The central role. - G. Jacoby, o.c., 73.-- "Aristotle's syllogism is the core piece never separable from every logic. It is at once that on which the theory of concepts and the theory of judgments issue.-- It speaks of 'all that is logical'.

It is supported on reading identities between:
a. expressed in terms and
The decomposition of such identities is the main task of every logic. - Therein also exists the essential distinction between logic (= traditional - philosophical theory of thought) on the one hand, and logic (= calculating logic) on the other." - This means that we have now arrived at the very heart of traditional logic.

Logic and epistemology.
'Epistèmè', scientia, science. - Epistemology is theory of knowledge (a.k.a. and esp. Science).-- Sometimes one confuses between the two.-- Epistemology is concerned with realities (whether or not expressed in concepts).-- An example.

A. - *Situation* - A. Atwomiloto is the Catholic editor-in-chief of the Indonesian magazine 'Monitor', in 1990 he publishes a list of fifty 'most admired figures'. In it, after President Suharto, the Iraqi leader Saddam Houssein and Atwomiloto himself, the Prophet Muhammad stands only in eleventh place.

Result: an avalanche of protests in primal Islamic Indonesia! Indonesia has, at present, about 179 million inhabitants of whom 90% are Islamic.

Monitor is banned; Atwomiloto himself is charged before an Islamic court with **a.** blaspheming Allah (God) and **b.** incitement to violence. -- This was reported by the magazines in the West.

B. - *Translation into a closing speech.*
The data (realities) just mentioned can be represented as follows. For in every situation there are unjustified syllogisms at work.

E.g., "Islamic prepositions (expressible in prepositions) - the Qur'an, Qur'anic jurisprudence - are absolute (not open to relativization) and thus enforceable through courts.

Well, Atwomiloto and his magazine - in a poll of supporters of Pop Music and Pop Culture - violate that absolute, ('inviolable') character and immediately expose themselves to judicial prosecution (through blasphemy and incitement to communal (between groups, - races, religions situated) violence. Thus, the Islamic cultural pattern becomes enforceable via court at Atwomiloto.

The epistemologist is interested in true sentences: the (reins) logician in valid derivations. Whether the sentences are true (verifiable) or not does not interest him as a logician.

Consequence. - We translate the just-formulated concluding sentence into hypothetical wording.

Thus: 'if Islamic cultural presuppositions are 'absolute' and immediately enforceable through court actions and in if Atwomiloto and his magazine Monitor violate the absolute nature of said cultural values (by blaspheming Allah and inciting communal violence) then the Islamic presuppositions become enforceable through court'.

The logician, being a logician, does not think in true sentences but only in "if then" sentences! Here: "Do the two prepositional phrases lead logically strictly or not to the post-sentence?" This is the question that the pure logician will investigate. Only the inference or conclusion counts. - In this sense J.Fr. Herbart (1776/1841) wrote that in logic all judgments "categorical" according to the language form in syllogism are in their true essence hypothetical judgments, Cfr. *G. Hartensteing, Hrsg., F.Fr. Herbart, Sämtliche Werke*, (Herbart, Complete Works), Hamburg / Leipzig, 1850/1893, xxii, 506.

Another application.

J. Lachelier (1832/1618; Kantian) distinguishes a-prior and a-posterior closing reason. We explain briefly.

A. - Apriori syllogism.

"All the great goddesses of mythology are 'goddesses of destiny' and as such they determine fate and are instantly powerful.

Well, Aphrodite is such a goddess.

So Aphrodite, as goddess of destiny is destiny and at once powerful".

Recall for a moment *E.D. 28* (analytic/synthetic in Kantian language). - Quantity: 'all' and 'just one' (all the destiny goddesses among whom just one, Aphrodite), If all, then also one among those all! It comes down to a definition analysis.

B. - ***Posterior syllogism.***

"All the goddesses of Hellenistic mythology are, in the language of S. Paul (*Coloss*, and *Galat*.) "elements of the cosmos" (factors controlling our world). Well in Paul's eyes such beings are dualistic: they do both evil and good.

Well, he notes that Aphrodite does both evil and good (as patroness of all forms of eroticism).

So, in Paul's eyes, Aphrodite is one member from the collection of the "elements of the cosmos."

Is it necessarily the case that Aphrodite is one member of the cosmic elements referred to by Paul for such a reason? With reservations.

Ninth sample. - Reasoning theory 3 (closing redundancy). (33/35).
Bibl. ample: *Ch. Lahr. Logique*, 519/528.
The fact that there is a multitude of forms regarding closing speech is governed by two elements.

A. ***The figure (judgment scheme).***
The placement of the three concepts - terms - within the three sentences as subject or proverb determines the ‘configuration’ (verbal compound. ‘combination’). This gives four figures.

B. ***The mode (judgment).***
The quantity (of subjects) and the quality (of sayings) determines the modes (= plural of ‘mode’) of the closing speech. Which gives sixty-four modes”.

Combinatorics of syllogisms.
That is the interconnection of the figures (4) and the modes (64) to configurations. That gives 4 x 64 = 256 types (configurations) of the closing line. They were recorded in mnemonic verse by the medieval Scholastics. Consider “modus ponendo ponens” from above.

Usability of closing rationale.
Of those 256 possible types or forms, nineteen are logically valid and five to six are common.

Ch.Peirce’s three main types.
Peirce has left one of the possible combinations.
Deduction. - All the beans in this bag are white. Well, this bean (singular) / these beans (private) come from this bag. So this bean / these beans are white.

Move the first preface to the back: this gives induction. - This bean / these beans come from this bag. Well, this bean / these beans are white. So all the beans in this bag are white.

Note - This is generalization (from just one or some to all).

Again, move the first prepositional phrase to the back: that gives us reduction. - This bean / these beans are white. Well, all the beans in this bag are white. So this bean / these beans come from this bag.

Note: Peirce also calls “reduction” “hypothesis” or even “abduction.

Irregular closing steps.

Bibl. sample : *Ch. Lahr. Logique*. 527/526 (Syllogismes irréguliers). - The basic three-part formula "preposition 1 and preposition 2, postposition", occurs, in fact, mostly modified - simplified or connected e.g.. We dwell briefly on a few types.

A.1. - The enthymeme.

'Enthumèma' in Antique Greek means "all that one keeps in his inner being". So unstated, implicit syllogism.

Famous is following example. - A commissioner of the judicial police says to suspects before him, "The one who has an interest in committing the crime is guilty of it" (L. Annaeus Seneca (of Cordoba (1/65; Stoic thinker, teacher of Emperor Nero) in his Medea).

The closing speech in full: "The one who has an interest in committing the crime is guilty of it. Well, the crime has benefited you. So you are guilty of it".

Note - The conclusion is obviously restrictive (with the caveat that there is no other who benefits from the same crime),

A.2.1. - ***Polysylogism.***

This is chaining syllogisms such that the afterthought of the previous is the preface of the next. "What consists of no (material) part, it is impossible to disintegrate. Well, the soul of man - the incorporeal soul at least - consists of no (material) part. So the (incorporeal) soul of man cannot possibly disintegrate (= die). - Well, what cannot possibly disintegrate is immortal. So the human (incorporeal) soul is immortal".

A.2.2. ***The sorites.***

This reasoning consists of a series of sentences such that the saying of the previous sentence becomes the subject of the next. - "This river fizzes. What fizzes, moves. What moves is not frozen shut. What is not frozen shut cannot drag me. So this river cannot carry me". (Thus reasons the fox in one of the works of (Michel de) Montaigne (1533/1592; Septic thinker).

A.2.3. - ***The dilemma.***

Comes from Antique Greek 'dis' (twice) and 'lèmma' (premise). - One has a valid dilemma insofar as there is disjoint (either ... or ..., two and only two possibilities) and insofar as no counter argument is possible. The form: a double syllogism but with only one conclusion. - "Either ye were at your post or ye were not at your post. **1.** If thou wast at thy post, thou hast neglected thy duty. Thus thou art guilty of death**2**. If ye were not at your post, then ipso facto ye have lost your honor, Thus ye are guilty of death."

B. - *The epicheirema.*

'Epicheirèma', in Antique Greek, is 'attack'. Each preposition is immediately provided with its proof. - "An unjust assailant may, in conscience, be killed. - Both the law of nature and the stellar (= 'positive', introduced by men) law permit such killing as lawful self-defense. Well, Clodius (died in - 52, killed by gangs of Milo) was such an unjust assailant of Milo (-95/-48; Roman people's tribune). - Clodius' antecedents (= his life before), his companions, the type of weapons prove it. So killing Cladius was for Milo a legitimate self-defense".

Invalid closing reason.

1. 'Para.Logismos', in Ancient Greek, is (conscious or also unconscious) invalid reasoning.

2. 'Sophism' (later also 'sophismos') - so in *Platon*'s *The State* 495a - means the same thing. - The later language of logicians identifies paralogism with unconsciously invalid reasoning and sophism with consciously invalid reasoning.

Note : Please do not confuse 'sophistry' with (Proto)Sophistics!

Applicable models.

Epikoeros of Samos (-341/-271; founder of Epicureanism (Epicureanism), one kind of pleasure philosophy or "hedonism") wanted to pass off death as "nothing terrifying.

S 1 (sentence 1) : (= dilemma): "Either our soul dies with the biological body or it survives."

S 2 (sentence 2): "Well, if she dies with her biological body, then she no longer possesses any experience and, immediately, she no longer experiences any calamity; if she survives, then she is free from bodily calamities and so she is happier than in the embodied state."

Conclusion: "So in both cases, death is 'nothing terrifying'.

Note: As stated above, a dilemma is only valid if there are two and only two possibilities. Epikoeros omits a third possibility: the soul survives and endures e.g. regret or remorse or so about all kinds of miscalculations or mistakes in its life. In other words, Epikoeros poses a false dilemma.

Protagoras of Abdera (-480/-410: leader of the Proto- or First Sophistic (-450/-350), taught Eualthès (Lat.: Evalhes) rhetoric in return for payment (the first half was paid before teaching began, the second as soon as Eualthès won his first trial). Yet the latter did not plead! Protagoras put him on trial: "Either ye win this trial or lose it. If you win, our agreement is valid. If you lose, the judges will order you to pay. So in both cases ye pay". This cunning reasoning is one form of eristics i.e. shrewd reasoning.

Tenth sample: reasoning theory 4 (deduction/reduction). (36/39)

Bibl. sample : *J. Lukasiewicz* (1876/1956), *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, Oxford, 1951-1, 1957-2;

-- *Ch. S. Peirce* (1839/1914; founder of Pragmaticism), *Deduction, Induction and Hypothesis*, in: *Popular Science Monthly* 13 (1878), 470/462.

We now turn to two of the main types of closing speech.

But first a Platonist speaks. - "The 'analusis' (analysis.), i.e. the search for the propositions from which a certain proposition can be proved (...).

The 'sunthesis' (synthesis) which is the reverse of 'analysis', i.e. from a given proposition one proves another". - We give that a reframed form.

1. - ***'Sunthesis' (deduction)***

"If a, then b and if a, then b". -

This depends, of course, on the quantities (subjects) and qualities (sayings) of the sentences in question. - What is certain, however, is that the basic notions of "all" and "whole" highly valued by Platon - connoisseurs agree - are presuppositions in deduction.

'***All***' **- S 1.** - All beans in this bag are white.
- S 2. - (Well) this bean (sing.) / these beans (part.) comes, comes from this pocket (= belong to "all").
- Concl. - (So) this bean / these beans is / are white.

'***Whole***' **- S 1**. - This whole bean is white.
- S 2. - (Well,) this is a particle of this bean.
- Concl. - (So) this particle is white.

Recall for a moment *E.D. 16v*. (Identity) and you will see that the series "all/some (precisely one)/ none" and "whole/ part/ outside" dominate the reasoning. So much so that it is automatically "analytic" (Kant), "aprioric" (Lachelier), necessary.

Note - Platon did not know the current set theory or systems theory; however, he did know the concepts of 'all' and 'whole', (with the series just mentioned) as foundational concepts (as the basis of 'synthesis'). As *E. De Strycker, S.J., Beknopte geschiedenis van de Antieke filosofie*, Antwerpen. 1967, 104, should actually mention.

Other examples.

"All computer systems consist of a number of parts. Well, this here is one instance of such a computer system. So it includes a number of parts".

All whole computer systems involve all their parts, well this is a whole computer system.

So it includes all the parts". "And so includes among other things this part one can add.

Note: As seen *E.D. 28* (Analytic / Synthetic) (see also *E.D. 29; 32*), strictly deductive reasoning teaches nothing. It only illuminates one or more aspects (elements and/or totality). But that is already something! And above all deductive reasoning is the secret or not of all reasoning (a.o. the reductive).

Conclusion. - Therefore, the deduction is not so tautological (saying the same thing) and therefore useless.

Axiomatic deductive reasoning.

Anderson / Johnstons, Natural Deduction, 4. - There, proposers say what follows.

A mathematical judgment

This is proved by showing that it is derived from prepositional phrases (= axiomata, postulates).

Appl. model.

As an axiom, it is postulated that (for all cases x, y, z it holds that) x(y + z) = xy + xz. This is given (as a postulate).

Asked: prove that x [(y + z) +w] = (xy + xz) + xw.-

Proof: The proof or argument consists of a number of 'steps' (= deductive operations). - x[(y+z) +w] = x(y+z)+xw by virtue of the prepositional axiom: x(y+z) + xw = (xy + xz) + xw by virtue of the prepositional axiom. Immediately we have the requested (= sought).

Note: This clearly shows that while deduction does not teach anything new (tautological, saying the same thing), it illuminates aspects (applications). Mathematics, as pure computational thinking, proceeds in this way.

Note - As O. Jacoby notes, as generalized reasoning in deductions:

a. - Collections theorem: "All collections contain its elements, and indeed all elements";

b. - Systemic: "(All) wholes contain their parts, and all parts at that.

Of these, deductive judgments are merely the applications.

Day-to-day reasoning.

"If our Mieke studies well, then, normally, she succeeds and if she (in fact) studies well, then she (in fact) succeeds". - This example may seem trivial, but our minds reason like this every day (without doing it explicitly and in a reasoned way as happens in this logic). Logic draws into consciousness what is already happening unconsciously. This is in order to be able to work more precisely and responsibly.

2. -- *'Analusis' (reduction).*

"If x (unknown a), then b and if b, then x". - Ch.S. Peirce here speaks either of hypothesis or "abduction" (we avoid the latter term).

Applicative model. - "This handful of beans is white. (Well,) all the beans in this bag are white. (So) this handful of beans comes from this bag".

Or still: "This piece of bean is white. Well, here's a pair of beans with a piece missing. So this piece of bean comes from one of the two beans. This is - what is called in scientific circles - an explanation of a fact. As long as such an explanation or "explanation-of-why-or-why" is not certain (verified), it is called a "hypothesis".

Note - It is immediately clear that the derivation, in both cases mentioned is only possible (not necessary). Here:

a. it is possible that the handful of beans came from a different bag than the one in view (one was not an eyewitness);

b. it is possible that the bean fragment is from a third bean that is not in sight. But for now, the hypothesis is the only one available: the reasoning therefore remains restrictive (subject to further research).

Other appl. models. - "If our Mieke studies well, then, normally, she succeeds. Well, our Mieke succeeded. So she studied well".

Restrictive derivation, because, in a malicious interpretation, it could be suggested, "Maybe she didn't study so well but was in the prof's favor or, still, she got lucky in the choice of questions asked." But for now the hypothesis remains valid. As a valid 'explanation', of the good exam results,

"Where there is smoke, there is fire."

One knows the maxim. It covers a reduction or 'analusis'. - 'If fire, then smoke, Well, fire. So smoke" (Sunthesis). - "If fire, then smoke, Well, smoke. So fire". (The analusis in the proverb is made clear by our strict logical formulation).

Note - Behind this is another syllogism: "If cause, then effect. Well, consequence (here smoke).

Thus cause (here: fire)". This causal or causal reasoning is the basis of very many scientific experiments in which the true causes of ascertainable facts are sought. But already in everyday "reason" (reasoning ability) the identical same structure appears.

"Je pense, donc je suis". ("I think, therefore I am").

These phrases come from the founder of Modern - subject - or I-centered - philosophy, René Descartes (Lat.: Cartesius (1596/1690)). - "(If I think as I (subject), then I exist. Well,) I think. So I am".

Actually, thinking is dependent on being there: "All that exists as mind thinks as an I or subject. Well I exist as mind. So I think as an I or subject". - Which is actually, kantian said, a matter of defining. Which therefore gives rise to a - kantian put - 'analytic (definition-analytic) derivation.

Note **-** As a general premise, man, as embodied mind, makes up one system or coherent whole. Two essential aspects of such a system of mind are **a.** existence (which applies to all that is actually there), **b.** thinking). Well, between existence as spirit (in or without body) and thinking is an inseparable systemic connection: one can distinguish them. (those two traits) but one absolutely cannot separate them. That - those two "distinctness-hand-in-hand with separability", is the definition of a system or system.

Turn it or twist it as you will: set (Patonic: all) and system (Platonic: whole) - cfr *E.D. 17* (totum logicum and totum physicum) - are the partial identities at the base.

One more example.

"If (A) a spiritual (pure incorporeal) being, then (B) immortal (for incapable of disintegration as mere material or material things do with time).

Well, the (incorporeal) soul of man is such a (copy of) spiritual being (= A). So the incorporeal soul of man is immortal (= B)".

This is the deductive reasoning. One can reverse them: imagine that one day one has clear evidence of the immortality of the incorporeal soul of man (note: according to some philosophical schools, man exhibits more than one type of soul). In that case, one can reason:

"(A) If a spiritual being, then immortal (where the main clause represents B).

Well, the human soul is immortal (B).

So she is a spiritual being". (A)".

We give such examples to show that even in reductive reasoning the deductive mode of proceeding is never entirely absent.

Which demonstrates her role of "foundation.

Eleventh sample. - reasoning theory 5 (induction) (40/44)

It may surprise you to learn that only now does inductive reasoning formally exist. i.e. generalization (all) or generalization (whole). This is because the basis is invariably samples, i.e. partial grasps from a collection (one or more specimens) or from a system (one or more parts). From these samples one induces to all samples of the collection in question or to the whole system in question.

"An important (...) applied *form of reduction*, is induction". *Bochenski, O.Pl, Philosophical methods in modern science*, Utr./Antw., 1961, 146).

One may immediately add that in deduction, too, we invariably work with samples: no axiomatic-deductive system or part of it posits all possible axiomata but only a part or sample, out of that whole.

Conclusion. **-** Induction deserves a separate treatment in a logic worthy of the name.

Bibl. sample : *Ch. Lahr, Logique*, 591/598 (*L'induction*).
The author distinguishes at least three types of induction.
a. (What he is called) The "aristotelian" induction,
b. the 'socratic' induction (which is apparently the most general) and
c. an application to causal processes, the 'Baconian' induction.

The summative or "aristotelian" induction.

"What one has determined of each member of a collection (or of each part of a system), - each member (or part) taken separately, that one summarizes by asserting it of all the members (or parts) collectively." The so-called "generalization" or "generalization" here amounts to a summary.

Appl. model. **-** In his *Analutika* (= Logic) Aristotle says what follows: "Man, the horse, the mule - each taken individually live long lives. Well, (in the then interpretation) they are the (only) animals without bile. So all bile-free animals taken together live long".

Note **-** We have supplemented Aristotle's text with "each taken separately" and "taken together" to clarify what he explicitly meant.

'Summative' (Lat.: 'summa', sum, summary) perfectly conveys: one summarizes.

Bochenski, o.c., 146, says with regard to summative or, as he also says, 'complete' induction: "If x1, x2, x3 ...xn are elements of class a and all of its elements - beyond these there are none - and F (*note:* some trait of knowledge tested) accrues to x1, x2, x3, ...xn, then F accrues to all elements (*note:* jointly) of a."

This is defining in a complicated but rigorous way what summative or Aristotelian induction is.

Note: According to Bochenski, this "induction" is actually a deduction: this is correct insofar as summary is involved (if all separate, then all summative or joint); this is incorrect when, as the basis of a true amplificative (knowledge- or information-expanding) - induction, the summative induction comes to pass as a limited number of samples from a totality (collection or system).

The baconian or causal (causal) induction.

Francis Bacon of Verulam (1561/1026) is known for his work *Novum organum scientiarum* (Literally: New organon (*E.D, 08: Aristotle's Organon*) of sciences) (1620). In this work he calls for a reform of the sciences, which he conceives as a means of control, free from all religious concerns. To him, the well-understood inductive method seems the appropriate one.

Conclusion. - The inductive method exists from Antiquity (Socrates is known for it), also in its causal application (Anaxagoras of Klazomenai applied it: he lived -439/-428). So Bacon did not invent them. But he emphasized them with a typically Modern accent: by experimentation one "tortures" nature in such a way that it reveals its secrets and man makes of it the means to make the same nature, subservient to himself.-- Such is the modern background.

The essence: "If all water boils at 100° C., then o.w. this water and that water, Well, this water and that water boils at 100° C.. So all water boils at 100°c.. That is the first background.

Now for the typical Baconian reasoning:

"If cause (o), then effect (g). Well, consequence (g), therefore cause (o)". - "This water, that water (stitch pr.) reaches a boiling point.

Well, this thanks to sufficient heating,

So all water reaches a boiling point thanks to sufficient heating".

One does not see here a summary, to a real generalization: from one or some cases of causation one concludes to all.

So much for the two backgrounds. And now for the logic-straightforward formula:

"(For) all water (it is true that,) if sufficiently heated (O), it then reaches the boiling point (G),

Well, this water and that water after sufficient heating (O) reach the boiling point (G).

So all water, after sufficient heating (O), reaches the boiling point (G)."

The concept of '(natural) law'

Now reread *E.D. 30* (*Law and Rule*) for a moment. - Real induction, if sufficiently tested, can lead to real laws, i.e., statements that apply to all instances of a concept. Here for all water. This is immediately one example of the fundamental importance of true induction for sciences of all kinds. Especially for mathematical and natural sciences.

From summative to amplificative induction.

As clarified above:

a. the summative induction is the summary of tested specimens or cases;

b. the amplifying (knowledge expanding) induction is the extension to untested specimens or cases of the results of the summative induction.

Metaphorical (set theory) and metonymical (system theory) model. It is best to present simple models.

A. Metaphorical. S 1**.** - This bean / these beans come / come from this bag.
S 2. - Well, this bean / these beans is / are white.
Concl**.** - So all the beans in this bag are white.

B. Metonymic. S 1**.** - This is one part of a bean.
S 2**.** - Well, this one part is white.
Concl **.** - So the whole bean is white.

Cfr. *E.O. 17*. The notions of 'collection' (Platonic all (copies or 'images') and 'system' (Platonic: whole (the copy e.g.) are indeed - for the umpteenth time prefixed.

Textbook example.

Everyday we reason inductively: from summative to amplificative. - The school teacher is taking the children for a walk in the forest: "visual instruction". Suddenly a girl comes running with a beautiful striped plume.

Reasoning.

1. Clearly - for anyone who ever saw the whole bird - that plume is a part (= sample) in the whole bird body, - body which is the encompassing system (coherent whole) in which a set of plumes has its place.

2. So much for the summative induction: “One plume is known”. Now the knowledge-expanding induction: a child, acquainted with birds, says: “Wouldn’t that plume with the nice stripes be that of a magpie?”. That is the conjecture, i.e. hypothesis. Only further investigation, can give ‘conclusive’ (which proves that the induction here and now is a restrictive reasoning). The induction is non-necessary.

Let us note that VZ 1 and especially VZ 2 in both syllogisms contain the summative induction on the matter, while the NZ articulates the amplificative induction. One sees it: the verified core from which the real, i.e. knowledge-expanding, induction departs is expressed in a summary.

Socratic induction.

Socrates of Athens (-469/-399), the teacher par excellence of Platon who was his most brilliant pupil, is characterized by Aristotle as follows “Socrates dealt with the ethical virtues. He was the first who, with a view to this, sought to articulate general definitions (...).

The valid reason for this was his will to reach decisions by reasoning. - in ancient Greek: ‘sullogizesthai’ - (...), Two elements are with reason Socrates’ own achievement: inductive reasoning and general definitions.” (*Aristotle, Metaph*. M 4: 1078b 17-32).

Very specifically, Socrates was shocked by an emerging élite of ‘professionals’ (who mastered some ‘technè’, professional knowledge, yes, professional science); - if you will: ‘specialists’. They were experts in agriculture, shipbuilding or whatever, but they lacked conscience.

Consequence: he insisted that experts without sufficient conscience - “justice” in the language of the day - represented a potential danger to the polis, the society of the day.

As an aside, here is one of the cultural differences between the Baconian (attuned to nature subjugation and nature exploitation, religion - and morality-free) induction and the Socratic induction. Socrates went so far as to see fundamentally no distinction between a shrewd but unscrupulous specialist and a thief (who by definition is more shrewd, more ‘expert’ than most of his fellow citizens, but does not have a sufficient conscience). So much for background.

The Socratic Dialogue.

Socrates thus takes samples from the totality of conscientious and/or unscrupulous behavior. To generalize eventually.

More to the point: since he considered his own samples to be potentially one-sided, he sought, in the truly democratic spirit that characterized (in part) the Athenian population in particular, to get everyone to speak in order to echo the other opinions, i.e., samples other than his own. Which is the dialogical form of inducing.

Both of these, direct induction and dialogic induction, are found in turn in Platon's dialogues which contain precisely dialogic inductions.

The analogical induction.

Ch. Lahr, Logique, 608/611 (*L' analogy*). - 'Analogy' is partial identity (*E.D. 16*) - The analogical induction concludes from some established traits (properties) of something and something else (it involves comparative method) to possibly establish traits.

Appl. model. - Given: the Earth and e.g. Mars are two planets. Well, they are very similar to each other in shape, movement around the sun, axis rotation, etc. Wouldn't the similarity go so far that as the Earth has an atmosphere, Mars would also have an atmosphere? That is a hypothesis based on summative induction.

In terms of model theory: the Earth - model because known - provides us with information about Mars - original because unknown - to some extent. Well, analogical induction stands or falls on the degree of verified and of verifiable analogy or partial identity. Cfr. *E.D. 19vv*. showing that partial identity occupies a key position in our thinking.

Universal and statistical induction.

Bibl. sample : *W. Salmon, Logic*, 55ff, (*Induction by Enumeration*). - Summative induction is also called "complete enumeration". Port-Royal logic e.g. says that every "induction sérieuse" (induction to be taken seriously) relies on summative or complete induction. Locke and Reid reduce non-summative or amplificative induction to "probability calculus. Nothing more. - This is another way of formulating the fact that amplificative induction is one form of reduction (with restrictive character).

Well, universal induction relies on the coincidence of summative and amplificative induction, because one has 100% examined and summarized the individual cases.

Statistical induction did not examine 100% of the cases but still generalized or generalized to all or completely!

Twelfth sample. -- Reasoning Theory 6 (statistics). (45)

Bibl. sample : -- W. *Salmon, Logic*, 55/63 (*Ind. by En. - Stratistics*);

-- *I. Adler, Probability calculus and statistics*, Utr./Antw., 1986.

We first formulate the foundation (logically speaking).

A. - ***Universal and statistical induction.***

Universal Induction: either 100% or 0%, (all/no or whole/none). - Statistical Induction: between 100% and 0%. - statistical:

S 1**:** These beans come from this bag (private).

S 2**:** Well, these beans are 63% white.

Concl**. :** So the complement (= remainder) of these beans is 63% white.

Second form: S 1: This handful of beans (individual) comes from this bag.

S 2**:** Well, these beans are 63% white.

Concl**.** So the next bean is 63 chances out of 100 white".

The distinction of the two forms of closing words is clear: **a.** the after sentence refers to the total remainder; **b**. the after sentence refers to just one member from that remainder.

B. - ***Statistics.***

E.g., a government (status) or state takes into account an entire population (statistics).-- As a professional science.

1. ***Material object***. - A multiplicity (collection (metaphorical), system (metonymical) that is not immediately surveyable or transparent.

2. ***Formal object***. - This is the angle of view or perspective on the material object. That multiplicity is systematically subjected to statistical induction, which is summarized in numbers (after counting (summative) and classification (grading) (taxi- or taxonomy)).

Two aspects: **1.** Summative induction reflects the verified cases (a portion or sample);

2. The amplificational induction or statistics concludes from those tested cases or sample guessingly, (a.k.a. by probability theory) to all or whole. Which is only an approximate way of doing things.

The sufficient conditions.

All the laws that govern induction also govern statistics. - The basics, the summative part, may be insufficient for two types of reasons:

a. quantitative (one took few samples);

b. qualitatively (one did not proceed haphazardly, "at random" (hence "randomization"), but e.g. biased).

Apparently, such errors happen quite often in surveys (e.g., regarding opinion polls), which then regularly produce wrong predictions. The predictions of card readers do not differ that much from such predictions.

Thirteenth theorem - reasoning theory 7 (idiographic reasoning) (46/50)

One of the most difficult chapters in traditional logic is the logic of the one-time (unique, individual, singular). (Therefore, as soon as possible, a chaplet about that.

Bibl.st.:

-- *I.M. Bochenski, philosophical methods* 162/171 (*Historical Method*);

-- *C.G. Hempel; The Function of General Laws in History*, in: *Journal of Philosophy* 39 (1942) 135/ 481.

-- *G. Nuchelmans, Survey of Analytic Philosophy*, Utr./ Antw., 1969, 241.

Note that in addition to the historical sciences, the geographic sciences are also involved in the description and explanation of the singular and the singular.

There is, e.g., only precisely one Napoleon or Hitler; there is only precisely one Antwerp or Ural Mountains. The general concept - e.g. dictator or city or mountain range - cannot suffice to represent that which is unique in Napoleon or Hitler, in Antwerp or the Ural Mountains. As a model for a unique original, any abstract-general concept is inadequate.

To begin, two related concepts.

A. *The exceptional or rare.*

All that is exceptional or rare is not yet singular or unique, for there may be more than just one instance of it.

B. *The merely singular.*

Take a pair of bears (toys): each one separately is just one singular case of '(toy) bear'. But if they are made mechanically e.g., it is possible that they are interchangeable or 'identical': such that they are indistinguishable (swap them unnoticed and a child or even an adult will not know that there is another 'identical' one in front).

Conclusion. - Napoleon and Hitler, Antwerp and the Urals are not merely exceptional or even simply singular. They are radically singular or one-time. The notion of "just one" here is a singular-concrete notion: is singular that which is distinguishable to that degree that the rest of all that was, is, will be or is conceivable (possible) is distinguishable from it. It is that complementation or dichotomy "this here and now" (the only one), on the one hand, and, on the other, the absolutely whole rest of the universe or "being.

Conclusion. - The study or science of the single has its own object. It is called 'individuology' or, with a Greek word, 'idiography'. Spoken, one could also speak of proper name (because the proper name is the 'proper' name of the only (=/ species name).

A "definition" of the one-time.

"Individuum ineffabile", the individual is 'unspeakable' (understand: not mentionable in one or more general names). *Ch. Lahr, Logique*, 537, quotes "Non datur scientia de individuo", there is no science of the singular. - Thus one Western tradition, since antiquity. - Romanticism cut it short: the notion of Einmaligkeit (once-only) has since had its place in a complete logic.

The School of Coimbra.

Bibl. sample : *O. Willmann, Gesch.d. ldealismus, III (Der Idealismus der Neuzeit).* Braun-schweig. 1907-2. 112/115. The Conimbricenses, in the Latin of those days, published one work among others: *In universam dialecticam Aristotelis* (1605).

In it, all that is singular is defined as follows: "Id cuius omnes simul proprietates alteri convenire non possunt". (All that exhibits properties that make all taken together distinguishable from something else). It is seen that the emphasis is not on the singular but on the distinguishable (one also says 'discriminable).

Also: **a**. all kentraws, **b.** insofar as they constitute an indivisible whole (system). "Omnes simul". The notion of "collection" (all) and the notion of "system" (together, joint, whole) - remember *E.D. 17* - are in the background of such a definition.

Note - This is one form of induction and that is summative induction: first one looks up all the features separately and then one summarizes them into one whole - the definition: of each separately but all together (this is how summering's definition sounded (*E.O. 40*)).

The definition of a historical character.

In a distich (two-line verse), the Jesuits of Coimbra laid down the unitive definition:

-- Forma (creature form, i.e., the general concept that first of all situates something singular),

-- figura ('Gestalt'; configuration, material view),

-- locus (place).

-- stirps (descent),

-- nomen (name, proper name Patria (homeland, region of birth, area of residence),

-- tempus (time(dot)).

--unum (i.e., the one-time thing) perpetua reddere lega solent (invariably render the one-time thing).

In that enumeration of features that arises inductively, the (proper) name is indeed very special, because this is the only "singularity" that may not be universal.

One sees it: one defines by enumerating until the singular becomes distinguishable.

An application.

(A) ***Forma (creature form. Species name : female.***

(B) 1. figure (view): very beautiful; **2**. proper name: Roxana; **3.**origin: daughter of Oxuartes, satrap (kind of governor) of the 'basileus', the prince of Persia (this is how ancient Greeks called Persia 's king); **4.**native region: Baktrianè (an area of then Persia (+/- Turkestan/ Iran/ Afghanistan); **5.**Place: central Asia; **6.**time(dot): -327 Roxana marries Alexander III (the Great: -456/-323; founder of a Macedonian-Eastern empire, source of 'Hellenistic' (= late Greek) culture),-- -319 she leaves for Epeiros (Lat.: Epirus) with Alexander's mother. -316 she is deposed by Kas(e)andros (Lat: Cassander), prince of Macedonia (Macedonia, in northern Greece),-354/-297, Roxana is imprisoned and in -310 murdered by Kassandros.

Behold the "filling in" of the schema that allows one to construct a definition of a character in human history.

As demonstrated elsewhere, a definition should:

a. The whole defined ('overall') and

b. display only the defined ('exclusively').

On closer inspection ('theoria'), it is clear that the scheme of the Conimbricenses represents entirely the defined and only the defined. We say 'whole' but this requires explanation: to represent all the individual features that make up the complete being (system) of Roxana is impracticable.

Also the enumeration of the traits which constitute the conceptual content 'Roxana' (*E.D. 10*), must necessarily remain incomplete. "Individuum ineffabile" the unique is, in its full being, not pronounceable (in enumeration of traits namely).

However, this does not prevent the same enumeration from becoming sufficient, at some point, to indicate very precisely and unambiguously the scope of concepts that correspond to it.

Conclusion. - The enumeration of features of the content of the concept, even if incomplete, may be more than sufficient to indicate the scope of the concept. however unique, with 'akribeia', accuracy.

Says S. Thomas Aquinas (1225/1274; top figure of mid-century Scholasticism (800/1450)): "Thanks to the gathering (= enumeration) of such traits of knowledge ('formae'), one arrives at a very precise delineation of something unique in relation to the rest of 'being' (= universe).

Well, that was the one we were looking for. It is yet another result of induction.

Bochenski, o.c. 162vv, says that the idiographic method is applicable to historical facts. - Add We immediately add that geographic facts also qualify for it.

"'Not only to description but also to explanation' do such sciences (o. c., 163). That is, after the direct method (the phenomena themselves in first and immediate approach or description) comes, if sciences reach full development, the indirect method (or explanation, i.e., blotting out what lies behind the immediately experienced phenomena).

Bochenski sees two "explanations

a. *The ordinary generalization* (or induction -short).

Think of those who draw statistical laws from historical (or also geographical) data. Or even, perhaps, 'laws' i.e. regularly determinable data. Cfr. *E. D. 42* (*(natural) law*).

b. *The general reduction*.

This is then the hypothesis (to be verified) that explains in the strict sense. -

Application.

Given. - The fact that Alexander the Great at the time continued his conquests to what is today Western India. - This fact is evident from the description.

Requested -- The statement.

a. Lawfulness? It may be that Alexander - like all the great men of the world - and - what Herodotos of Halikarnassos before Alexander already established suffered from land hunger (nurtured imperialism). In that case, he is referred to as one instance of a whole collection or as one instance of a general "law" (with many caveats, of course).

b. Idiographic explanation (hypothesis)? It may be that Alexander had very individual reasons for travelling to India. One fact points in that direction: he built an altar in honor of the Great Deities he had inherited from his parents, on the very border of what we now call India. Alexander was deeply religious as already ... his behavior in Egypt had proven: he attended the ceremony of the priestess of Mendes (where the "holy" goat was venerated). Seen this way, Alexander was not a case of historical legality (the usual inductive reduction) but an example of individual value choice.

Now how can both views be "proven"? By taking further samples in our historical documentation (which again is induction).

Applied syllogistics.

As tight and tedious as it may be, let's capture all of this in keyword form.

1. ***"If all the great ones of the earth, then suffer from land hunger.***

Well, Alexander III the Great, one of the greats of the world. So Alexander III the Great suffers from land hunger". This is evidently the deductive reasoning concerning a historical character (and one of his deeds: the march against the Indies).

"If all the greats of the earth suffer from land hunger, then this and that (including possibly an Alexander III the Great) great of the earth suffer from land hunger. Well, Alexander III the Great, among others, is suffering from land hunger. So all the great ones of the earth suffer from land hunger".

This is the inductive reasoning: it takes as a sample one single person (member of the "greats of the earth") to generalize. - If all the great men of the world, then suffer from land hunger, Well, Alexander III the Great suffers from land hunger. So Alexander the Great one of the greats of the earth".

This is the reductive reasoning or hypothesis, The causality lies in the fact that one is "great of the earth" such that one comes to land hunger precisely because of this. It is then a causal or causal reduction. This is an explanation stricto sensu. From the effect one reasons to the cause (at least one factor).

2. ***Induction and general reduction belong together:***

They are both one type of reductive or (Platonic) "analytic" reasoning. Yet the difference is remarkable. - Reduction 'explains' by seeing a general law applied in one case; induction 'explains', a general law by seeing it applied in one case of it.

Both are reduction in that they provide possible explanations that are valid with reservations, i.e., to the extent that further research confirms them.

General conclusion.

From the list of the three types of capstone above it is abundantly clear that historiography (and in its way geography) is neither unilaterally deductive (as, in its way, a Hegel or even, to some extent the Ancient Greek historian *Thoukudides of Athens* (-465/-401; work: *The Peloponnesian War*) did) nor unilaterally inductive or simply reductive. Not even purely ideographic do they proceed as syllogisms are at work containing general terms. They are sciences that employ all possible reasoning.

Fourteenth sample.-- reasoning theory 8 (authority reasoning). (51/55).

The medieval Scholatici spoke of "argumentum ex auctoritate" (authority argument) in their Latin.

Bibl. sample : *W.C. Salmon, Logic, Englewood Cliffs, N.J., 1963, 63/67 (Argument from authority*).

On a daily basis we appeal to some authority (what, in Peirce's language is called 'righteousness method' (authority method)). A person - a movie star who 'recommends' soap; Einstein as a follower of a supposed 'relativism' (because he founded the theory of relativity) -, an institution - the I.M.F. (International Monetary Fund), Amnesty International -, a text Journal de Genève/Gazette de Lausanne as a reliable source of information for down-to-earth businessmen -, all of these emanate somewhere an 'aura' or aura that commands respect. At least with a limited number of people.

Extremely strong form was once authoritarianism:

In the former Soviet Union, the K.P. (Communist Party) was decisive; Hitler, under Nazism, was "der Führer" (the leader) and Mussolini, under Fascism, was "il Duce" (the leader). Pop figures suck in young people to such an extent that the entire parenting system of the established society is dwarfed and gives way to "charismatic figures" such as Elvis Presley or The Beatles.

One of the most striking features of 'authority' as described above is that "one no longer reasons". The logical ability is "eingeklammert" (put in brackets). This is particularly clear in cases such as: the glittering image (image impression) of film stars (their 'glamour' or 'shine' has a hypnotic effect, is associated with e.g. some bath product), the popularity of footballers (who e.g. support advertising for cologne which they may know nothing about), the prestige of some scientists (who go beyond their speciality). - So let us reason soberly.

The syllogism.

"X is a trustworthy authority (a.k.a. expertise) when he makes the judgment p. Well, X asserts p. So p is reliable".

Or: "If X is reliable in this respect, then his/her judgment p is reliable. Well, here is a p (judgment of X). So p is reliable". Consider the reasoning: despite its appearance ... be reductive, it is actually, as far as authority argument goes, deductive.

The reductive syllogism.

In fact, there does exist a reliable authority argument. - It then concerns an epistemological authority (*E.D. 31v.*: "*True Sentences*").

"If **a**. the vast majority, **b.** a majority, **c.** a number of judgments p of X (regarding his/her specialty or area of expertise) are true, then X possesses **a.** very great, **b.** a great. **c.** some authority.

Well, **a.** the vast majority, **b.** a majority, **c.** a number of statements p of X (concerning his/her domain) are present here.

So those statements share in his/her authority".

Formally, of course, this reasoning is deductive. But the restriction or caveat is in some phrases; "not all, but some judgments p are true (even if the vast majority are true, there is the rest that are false) and "concerning his/her specialty" (which insinuates that outside of that domain of expertise untrue judgments are likely, very likely, yes, certain).

Well, which is the basis of those two constraints? The induction. The preface of the deductive authority argument is a purely inductive sentence. There and with reason there is the difference with the purely deductive, because axiomatic authority argument of just before: there the two restrictions hardly resounded and the axiom of authority simply weighed in.

Conclusion: - The valid epistemological authority argument betrays in the preface - with - caveats that it is merely a deductive derivation from an inductive contact with reality.

Applicative model. - Some thinkers invoke Albert Einstein (1879/1955; mathematician and physicist; Nobel Prize in physics 1921), who, in 1905, formulated Einstein's law (relation between photons and electrons) and 1905/1911 introduced a cosmology (universe theory) that bears the name "relativity theory. In the microphysical and macrophysical fields, according to that theory, non-absolute statements applied in part.

Well, some deduced that, in addition to mathematical and physical statements, our traditional value judgments, basis of our Western culture, are also non-absolute but only "relative" (= dependent on other elements or factors).

This is sham authority.

a. Einstein never gave any evidence of the non-absolute validity of cultural values.

b. and forgot that his epistemological authority was only mathematical and physical (and not culturological).

Applicable model.

Einstein was a supporter of Modern determinism (all mathematical and physical phenomena absolutely obey some prior factors such that subsequent ones are absolutely calculable).

Undivided Authority.

We said that the domain of expertise was also decisive: If other experts do not contradict X's claims p, indeed they even confirm them, then this naturally strengthens the epistemological authority argument.

Well, since Prigogine and his chaology (which claims that the chaotic or disorderly element in the entire cosmos is so strong that Modern determinism is untenable or at least must be (strongly) weakened), Modern determinism (and immediately Einstein's authority on this point) has reached a crisis. In other words, there is no longer any undivided authority on the matter.

The authority of science and scientists.

Two restrictions come to mind here.

A. - *The Platonic constraint.*

Reread *E.D. 26* ("*two fundamental directions*"); *27; 32* (*Lachelier's typology*); *33 (Peirce's triad*); (*35 Platonic: sunthesis / analusis*).

Platon did, in his time frame, what would now be called 'fundamental research' on 'technai' (professional sciences). - Not only ethical (and political; cf. *E.D. 43*: *conscience*), but first of all logical: the presuppositions or starting points of positive or definite sciences are invariably axiomatic, for one does not prove all the judgements which are presupposed, - if one thinks of looking for any proof at all. Think of the "point/line/plane/body" elements of geometry, for example. Platonically these are mere "hypotheses" (merely prepositional phrases or ... postulates or axiomata).

Conclusion: The foundations of professional scientific specializations are subject to 'analusis'; what do they, in turn, postulate? As long as this 'analusis' or search for the foundations has not been completed, such scientific work 'hangs' in a logical vacuum..... Thus Platon.

B. -- *The subject restriction.*

Bibl. sample *:* G. Del Vecchio, *droit et économie*, (law and economics), in: *Bulletin Européen* 1962: janv. / févr., 10/12.-- We faithfully take our method a surveyable sample.

Western Enlightened Rationalism (since Galileo. Descartes et al.)

This rationalism has given "all that is (professional) science" an "authority" like never before. One even has the impression that "scientific authority" surpasses all other forms of authority. Yet the more than one thousand subject sciences that have come into being since the days of the Renaissance, and are still coming into being every day, fall under the law of "If the prefaces, then the postfaces." Do we examine with Del Vecchio how.

Luigi Einaudi (1894/1961; economist, president of the Italian republic 1948/ 1955) argues that his profession, state economics or economics, is a purely hypothetical and partial science. And this is as a specialism, as a field of expertise.

a. - ***Economics as a professional science is partially value-free.***

Only economic values (goods, services) apply. This creates - what is called - the "homo oeconomicus", the human being insofar as he takes only economic data into account. - Whether this specialist takes the Liberal free market economy or the Socialist planned economy as a global hypothesis (= set of premises), within his "field" (domain, speciality), he adheres in principle to positive (definite, merely establishing) facts and to explanations and generalizations which build solely on this definite basis.

b. ***- Einaudi's opinion.***

"The economist as a professional scientist - says this economist - does not say to his fellow men 'Thou shouldst act ethically and politically in such or such a way', in which case he would be exceeding his domain, - a domain in which he is not an expert, because he would be doing ethics or politics. - Says Einaudi: "He does say: 'If you ethically and/or politically act this way or that way, then - given economic laws - your actions will have this or that economic consequence'."

In other words, the positive science economist never directly provides ethical and/or political rules of conduct, - but he does provide clues as to the economic implications (consequences) of ethical and/or political behavior.

Appl. model. - If a government allows a wage increase (= a socio-political act) in one or more sectors, then this is, for example, a social measure (out of social justice), but then it is at the same time an economic measure, because the competitiveness of firms which spend more on wages may be reduced as a result and export opportunities may possibly be affected."

Behold one sample of Modern-rational thinking in "If, then Sentence."

Ch. Peirce on thinking methods.

Ch. Peirce was an observer. He observed that, in fact, people often act according to four patterns: **a.** idiosyncratic ("I individually think this way"), **b.** straightforward ("I think as I am taught"), **c.** preferred ("In every discussion I think this way"). Finally, also "objective" (truly scientific). - Most professional scientists exhibit the four methods simultaneously.

Quirky/preferred.

Bibl. sample : *Ch. Alain, L' effet lunaire*, (The moon effect), in: *Psychologies* (Paris) 77 (1990: juin) : 50/63. - The moon, according to some, has an influence on behavior. - The author quotes none other than George Sarton, "the nestor of the history of science, on Galilei, the founder of the exact (= experimental and mathematical) sciences.

"Galilei (1564/1642) wanted at all costs to eliminate astrology as a form of superstition. - This led him to vehemently reject even the possibility that the moon would influence the tides.

He may have been one of the greatest minds of all time, but, in this case, his passionate rationalism led him astray. Is it true that so many are misled by their "irrational urge," - the urge for all that is 'mysterious,' it is also true that Galilei 'Rationalism' led him to prejudice, - something that is no better than superstition."

Galileo's reasoning: "If all forms of superstition -- astrology, for example -- are to be fought at all costs (*Note*: one of the great axioms of the Modern Rationalists) and if one of these forms of superstition states that the moon influences the tides, then this form of superstition must be fought at all costs -- at all costs (meaning: by not even examining whether there is truth or not).

Straightforward.

"To what, ultimately, does scientific evidence lead?"

1. The skilled person works in a lab.

2.1. His results reach his client; immediately they are rarely available to the public.

2.2. They are often very different from the "information" that gets through the loopholes of the sifting that our economic system exercises on the dissemination of scientific data, putting return over truth ("objective method").

Fifteenth sample.- Reasoning Theory 9 (lemma). (56/59)

Working with one or more unknowns,--see what, in Platonic thought, "working with lemmata" means. One could also say: working with "working hypotheses. If only "working" with things that are, for the moment, only partially known, because the totally unknown is not a "real" lemma.

In terms of model theory:

a. something, I, is too unknown to draw anything from it regarding knowledge;

b. that same something, I, can be provisionally equated with a model, m, the lemma, 1. Thus, by m (= lemma) one thinks of I (= the partially unknown). This association forms the basis of lemmatic reasoning.

Now a few clarifications.

"If, I, the (partially) unknown, is equated with m, the model) in order to work with it, (however it may be) AND if it follows that m is usable, then m is (possibly, even (very) likely) to be equated with I totally)."

Behold the reasoning. Everything hinges on the provisional equivalence (I = m) and the practicality of that provisional equivalence.

Bibl. sample :

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

- id., *Abriss der Philosophie,* Wien, 1959-5,

Behold what Willmann, the rare mentioner of lemmatic reasoning, says in substance.

1. - *Diogines Laërtios,*

Diogenes, in his work *3:24*, says: "As the first, Platon gave the inquiry by means of 'analysis' to the Thasian Leodamas." - Willmann: that type of 'analusis' (casually if A, then B; well, B; so A) consisted in introducing the requested (the sought, i.e. the (partially) unknown, as already given (already known).

In other words, one acts as if the yet unknown was already known. as if the original (the unknown) was already the model (the known).

The distinctive feature - according to Willmann - is "die vorgreifende Ansetzung des Gesuchten" (the anticipatory identification (with the given) of the wanted). - But terminologically, Willmann adds, it would be more appropriate to adopt the name "pro.lepsis" or "lematic method," since the actual analysis only gets off the ground after that. Consequence: lemmatic-analytical reasoning.

2. *Willmann*

Willmann says that one of the applications of lemmatic-analytic reasoning is to introduce and work with letters, as unknowns (x, y, z) instead of numbers (7, 3, 15). He claims that Francois Viète (Lat.: Vieta (1540/1603; French algebraician) in particular founded this analytical method. It was called 'letter arithmetic'. - One sees it: one pretends to summarize the collection of all possible digits in e.g. x or y.

In other words, x or y become models of all possible numbers. One works with the model as if it were the original. And ... that this way of doing things is useful is shown by the history of mathematics since then (including mathematical logic).

Note - In physics and chemistry or engineering circles, people sometimes speak of the black-box method. The black box method. It is called 'black' because it is 'black' on the inside, i.e. one cannot enter it and - it is therefore unknown. - For example, in electricity theory: a box cannot be opened; one tests the wires going in and out of it. The wires serve as "lemmas" (models that provide information) for the black box itself. Thus the box reveals its "secrets. - That such a thing turns out to be useful, one must ask an electrician.

Ch. Lahr,

Ch. Lahr Logique, 488s. (*Définition de mots et définition de chose*), (Definition of words and definition of things), says what follows.

a. A definition is the representation in words of that which makes something distinguishable from the rest, - in Antique language "the being" ("the essence" or "the form of being" or "essence").

b. Now, among other things, there are two types of defining.

b.1. The lexicographers (dictionary compilers) use the nominal or word definition: they replace one word with one or more other words (thus staying within the domain of the verbal or verbal).

b.2. The more real professional scientists break through this wall of the verbal and want to arrive at a real or objective definition: they fill up the words (of lexicographers, for example) with the results of tests of all kinds.

Conclusion.-- One sees the similarity with the Platonic lemma that what scientists seek is provisionally equated with what the mere verbal designation (model) gives in terms of knowledge content. Such a purely verbal lemma: one works with it. One works with it in such a way that in the end a businesslike content can be given to the (empty) shell of the verbal definition.

Lahr says, in passing, that mathematical definitions represent a different type: once the verbal (semiotic) formulation (drawing out) is contradiction-free, then a mathematical definition is valid.

Reread *E.D. 37* (*Axiomatic-Deductive Reasoning*): the axiom "x(y + z) = xy + xz" is contradiction-free. Thus, it is a valid definition. -- If one wants the verbal (semiotic or sign theoretic) definition coincides with the business one.

The scientific "passage from verbal to business definition".

This one is useful, as the whole history of science shows. Says Lahr, o.c. 498: "In fact, every scientific search starts from the verbal definition to arrive at the business definition, because, before one wants to define something, one must have a vague representation of it that makes them distinct enough from the rest." One cannot define the Platonic lemma any better.

The introduction of the principle (axiom) of sufficient reason.

One may be familiar with the boundless discussion regarding the modernly conceived principle of (necessary and) sufficient reason or ground.

Briefly stated, "If A (in this case: sufficient reason), then B declared, justified, 'founded' ('justified'), it is seen that this is the first preposition of all possible first prepositions.

As an aside: The whole of modern rationalism hinges on the decisive proof of that "preposition of all prepositions."

H, Albert, Traktat über kritische Vernunft (Treatise on Critical Reason), (1969), perhaps best summarizes the situation.

Either that principle must be founded (proven) by a new preposition (= impracticable regressus in infinitum),

either the principle must have itself or some other yet-to-be-founded presupposition as presupposition (= zero-funding peculiar to circulus vitiosus, i.e. circular reasoning),

either the principle must be presupposed as an undoubted, though unproven intuition (insight) introduced as an absolute presupposition (axiomatic, "arbitrary," indeed, "dogmatic" foundation).

Platonically, it is clear:

The unquestionable though unproven (yes, unprovable) intuition (insight) is the lemma with which even modern nationalism must work if it is to save reason as a responsible behavior. - Its usefulness leaves no doubt.

The "pragmatic maxim" (Ch. S. Peirce).

In his *How to Make Out Ideas Clear*, in: *Popular Science Monthly* 12 (1878): 286/302, Peirce articulates his "pragmatic maxim".

"Consider what effects (Consider what elaborations) that might conceivably have practical bearings we conceive the object of our conception to have (we think the object of our thought act must have). Then our conception of these effects is the whole of out conception (in which case our understanding (thinking act) of these elaborations is the whole of our understanding of the object)."

Peirce himself explains this difficult formulation in more detail: "People have called this maxim a 'septic' and 'materialistic' principle. - In fact, it is only the application of the one principle of logic which Jesus recommended: 'by their fruits you will know them'. Which means that this maxim is closely related to the ideas of the Gospel. (...).

Also: we should not take the term 'practical scope' in a low and sordid sense." (*R, Berlinger" Hrsg, / K1, Oehler, Uebers,,, Ch. S. S. Peirce, Ueber die Klarheit unserer Gedanken*, (On the clarity of our thoughts), Frankf.a.M., 1968, 62/63).

"If - writes Peirce in 1905 - a certain prescription for an experiment is possible (in readiness), then a well-defined experience (observation) will follow."

Indeed: J. Dewey, continuing Peirce's Pragmaticism in his (idiosyncratic) way, would write in 1922 that the main idea of Pragmaticism (Peirce 's variant of general Pragmatism) is "*the world in the making*."

Not the "contemplative-tragedy" of dwelling on thought-contents, but working with thought-contents is the message, experiment with thought-contents, and you will come to know their proper cognitive (epistemological) scope. In other words, true knowledge does not lie only in the past; it lies rather in the future. After one has worked with that knowledge.

Note: We have deliberately avoided any reference to Platonic lemmatical-analytical reasoning: yet we arrive, fundamentally, at precisely the same basic structure. Knowledge - if one works with it - shows in the course of working with it its true content (and at the same time its true extent).

Sixteenth sample. - Reasoning theory 10 (the incongruous) (60/62)

Ontologically (i.e., from the standpoint of a theory of reality), "all that contains contradiction (contradiction, 'paradox')" is impossible. Such a thing cannot "be" (actually exist). - However, our ontological consciousness is so broad that it can think even the impossible for a moment but then merely as impossible, For the radically impossible is also unthinkable.-

One can also depict this in mathematical (and logical) symbols. For example, all contradiction can be written as "p or non-p" (= p or -p") as *J. Anderson/ H. Johnstone, Natural Deduction*, Belmont (Calif.), 1952. 33 (*Reductio ad absurdum*) and 95 say.

Dilemma.

Let us resume *E.D. 34* (*Either ...or...*). - Before we describe what "reductio ad absurdum" (literally: "reduction to the absurd or incongruous, i.e. to contradiction) is, (Aristotle calls this thinking operation "ap.agogè" (apagogic reasoning or "abductio")), we must clarify what a dilemma is. - Let us say:

If only a or -a and if - a is incongruent, then a.

One paid attention to the restrictive of the formula: "only". For, if there is, e.g., a third possibility, then counter-argument (refutation) is possible. We can also express this in model-theoretical terms: "If either model (a) or counter-model (-a) and if counter-model is preposterous, then model (a)".

As an aside, in Latin, such an either-or formula is represented by the term "aut" (not "vel"). In particular, "a aut -a".

The proof from the absurd.

Bibl. sample : *W. Salmon, Logic*, 30 (*Reductio ad absurdum*). - The author describes as follows. - Supposedly, we want to show that the judgment p is true (model). To this end, we introduce an opposite lemma (*E.D. 58* (*Association*)), which we show to be unusable (leading to contradiction).

In Salmon's language: as a counter 'hypothesis' (counter model), we postulate that p is false. In particular: non-p or '-p'. Salmon assumes that the laws of the dilemma (which he does not explicitly state) hold.

(Sub)deduction.

Now follows a 'sunthesis' (Platonic for 'deductive'). Salmon also calls them 'subdeductive'. This deduces from the hypothesis the false judgment r.

The reasoning: "If '-p' (hypothesis), then (via valid (sub)deduction) untrue conclusion r". This untrue conclusion betrays that the hypothesis, from which it follows strictly logically, is also untrue.

Corollary: "If '-p' (as shown by the subductive conclusions) is false AND if there are only two possibilities (either p or '-p'), then p is true." Behold the structure of the proof.

Note : - Salmon mentions a special case. - He calls it "inner contradiction". - If the subdeduction from '-p' leads to p, it implies that within the same frame of reasoning, simultaneously '-p' and p would be true. Which is "contradiction in terms".

A mathematical model. According to *D. Nauta, Logic and Model*. Bussum, 1970 27vv., already the Paleopythagorean mathematicians (-550/300) knew the proof from the absurd. -- See here how the author renders this.

The theorem. "The square root from 2 (sq2) is immeasurable ('irrational')".

A rational number is a number that can be represented by a simple fraction (the ratio of two integers; e.g., "2/4").

Second data: The definition of the symbol sq 2, namely, "$(\text{sq } 2)^2 = 2$" -- Behold the two 'data'. - From there, one proves that no fraction is equal to sq 2 (the model).

The evidence (argument).

Stated: we postulate the counter-hypothesis (counter-model), namely, there is indeed a rational number equal to sq 2. - That - that assumption (for now the (sub)deduction begins) involves that there are two numbers (the elements of a rational fraction) a and b such that a/b equals sq 2 ("a/b = sq 2"). This is a derivation from the first fact above.

Conclusion: we already have in a/b our hypothetical counter model, - in mathematical terms.

Simplification.

Mathematically, that counter model a/b can be reduced to its simplest form. That is, we simplify the fraction a/b by dividing away all the common factors of a and b. Result: the simplified counter model is called "as/bs". - Now the derivation (subdeduction) can begin.

Reasoning.

(1) as and bs have no factors in common

(2) $a^2s / b^2s = 2$ (o.k. the definition (given).

From **(2)** follows $a^2s = 2b^2s$. This implies that a^2s is an even number. But if this is so, then as must also be an even number (expressible in the formula "as = 2r", where r is a certain number)

The contradiction.
It follows from **(1)** that bs must be an odd number,

On the other hand, as a consequence of (2), $b^2 s = a^2 s/2$ or $b^2 s/2 = a^2 s/2$ holds . We replace (substitution rule) as with 2r. That gives is $b^2s = 4r^2/2 = 2r^2$. So b^2s is now an even number. But, if so, then bs must be an even number.

Decision. - If the model as/bs exists (counter model), then (provable by a subdeduction) bv must be both even and odd. This is a contradiction (because bs is either even or odd). -

Second conclusion. - There is no rational number whose square number is equal to 2. Or the square root from 2 (sq2) is immeasurable ('irrational'). That was the model (in the beginning).

Says O. Nauta, o.c., 27: "The most beautiful achievement of the Pythagoreans is surely that they proved that it is impossible to find in a rational model (a fraction) for the square root of the number 2 (sq2),-- That is, for the number whose square is 2 (...). - The finest example of a proof from the absurd from antiquity".

The author continues:
"**a. -** In a proof from the incongruent, one assumes (*op.* : hypothesis, presupposition) that there exists a counter-model. I.e.: an 'instance' (example) that satisfies the particulars of the problem but not the requested one (which is provable).

b. - In a systematic way one then shows that such a counter-model cannot exist, because it leads to an incongruity or contradiction (other terms for this: 'contradiction', 'paradox'). - It is then proved that every object that satisfies the data, must also satisfy the demand."

Note - Geometry rather than arithmetic.
Nauta: "The Pythagoreans did not conclude from this that there are apparently numbers that are 'unmeasurable' or 'irrational'. (...). That is why the Greeks considered geometry a more general (...) science than arithmetic, which, after all, was flawed: - In the East, they were already working with 'irrational numbers like V2'. - The Greeks did not broaden their understanding of numbers.

Seventeenth sample. - Reasoning theory 11 ("ad hominem") (63/65)

This method of argumentation is strikingly similar to proof from the absurd. But it consists in playing "the opponent" against himself. If you will: one shows that the opponent contradicts himself (which constitutes a special form of "contradiction", namely, "self-contradiction"). One exposes the incongruity within what he claims. "Ad hominem" can be translated by "on the man (here: the opponent)."

Bibl. sample : *W. Salmon, Logic*, 67/70 (*Argument against the man*).

This form of reasoning can take more than one form. We provide a few applicative models.

Genetic fallacy.

The first is what Salmon calls "genetic fallacy," ("genetic fallacy or fallacy of thought"), where "genetic" means "due to genesis or origin" -

"historical dialectics"

The second borrowed from Platon - contains - what has been called since the XIX - century - "historical dialectics" (i.e. logic that takes historical data into account). Something often attributed to Hegel and Marx, but clearly present in Platon's logic.

1. - *Origins-based fallacy.*

Salmon, o.c., 69:

a. Some (Psychoanalytically oriented) psychologists claim that there are strong clues, in Platon's life and works, for the fact that, because he suffered from the famous Oedipus complex (which involves a mother-son tension or even conflict), he was neurotic.-- Well, given -- according to those psychologists -- that complex was unresolved, Platon's philosophizing shows the traces of his neurosis.

In other words: one can talk about Platon's philosophy in terms of Platon's neurosis. This would then be one form of 'rationalization': Platon would have dealt with his inner problem by philosophizing. Whereby that philosophy is nothing but a disguised neurosis, which testifies to his disturbed personality but not to rigorous logical thinking per se, independent of his highly subjective situation. He would in logical language merely express his own clouded psyche.

Conclusion: such philosophizing cannot possibly be taken seriously, unless ... as a symptom of a neurosis (nervous disease).-- One sees the "genealogy" (Fr. Nietzsche) or designation of origin: the genesis is psychologically disturbed.

b. See here what can be argued against it.

b.1. As e.g. K. Popper once said, in an interview: the Psychoanalysts explain so many different things that the question arises whether such an explanation system does not step too lightly over the real data in order to ... glue its own presuppositions onto this vaguely perceived reality. Platon, on the other hand, exhibits such a degree of logical thinking that one will have to present hard evidence to "make true" his so-called neurosis.

b.2. As Salmon says, a whole bunch of Platon's statements bear witness to strict logical argumentation. Even if Platon was a neurotic, they remain on that strictly logical plane and ... are assessable for their real and actual value only by logical - not by "genealogical-psychological" arguments.

2. *Historical dialectics.*

What follows is an "argumentum ad Hominem" (it brings the interlocutor into contradiction with himself), but at the same time it involves historical dialectics. That is: what happens (in the meantime) is included in the logical (counter)reasoning.

Schedule:

S 1. - Thou claims p.

S 2.-- Well, your p leads, meanwhile (in virtue of what happens or has happened meanwhile) to logically unacceptable (eventually incongruous) conclusions. - So what you claim (p) has (meanwhile) become unacceptable. The NZ follows both from principle and from accidental - historical data.

Platon, Politeia

a. Cephalos' Thesis. - Cephalus (Lat.) or Cephalos is in conversation with Socrates (Platon) about conscience. Or better: living conscientiously ('righteously' in the Old languages). -- According to the Socratic method, one is, jointly seeking a definition, i.e. an articulation of the content of a concept (here: "acting righteously") such that this articulation:

a/ covers all cases of conscientious living and

b/ only on cases of conscientious living (the discernment).

Kefalos's definition reads, "Justice is always telling the truth and always getting justice done."

b. The 'antilogia' - 'Antilogia' is 'consideration' (= critical remark). - Platon deduces here, but in the prepositions he incorporates, in addition to general propositions, accidental facts situated in history.

See here: "If what thou, Cephalos, asserts is always true, what follows from it, if one takes into account what (meanwhile) happens?" That is - in passing - the Platonic "sunthesis" (deduction). Or "forward dialectic".

Platon (in the person of Socrates) takes his opponent ("ad hominem") at what he claims (p).

Now pay close attention to the historical facts in the prefatory sentences: "If a friend, in his right mind, entrusts you with weapons, but later, having become insane, asks for them back and if you, Cephalos, give them back to him - he has, taken abstractly (outside of any historical situation or context), a right to them - then no one will maintain that, in that hypothesis (premise), you are acting 'righteously' (= conscientiously)."

In other words: by acting in this way, Kefalos would be putting weapons at the disposal of an insane person. To which, in fact, he has no right (anymore).

One can see it: from what has been asserted, Platon draws an unacceptable conclusion that points to a contradiction within the assertion system of Kefalos, who is precisely doing ethics with unethical conclusions.

Note - In passing. One is familiar with the traditional distinction between "formally lying" and "hiding the truth". The reasoning here is analogous to the one above:
(a) in principle (abstract, unhistorical) one is always obliged to speak truth;
(b) in fact (historically, according to situation or context, 'circumstances') there are exceptions to that "general rule". Think of a priest, a physician, a confidant(s) who are obliged to professional secrecy. In this last case they are not formally lying, because instead of being obliged to speak, they are obliged to remain silent.

Or even clearer: the curious interlocutor(s) has no right to speak truth in a number of singularly-concrete circumstances. - One has called this 'situational morality' or (formerly) 'casuistic' morality. 'Casus' in casuistic, means "non-abstract, singular-concrete, 'historical' case.

Note - A well-known case of "ad hominem" has left us Zenon of Elea (+/- 500), student of Parmenides: he reasoned against his teacher's opponent as follows: "thou dost not prove as well as I all that thou dost assert".

In other words: he played off the opponent's lack of evidential value (which he honestly admits to himself) against that opponent (who pretended to be evidential enough).

Eighteenth, sample. -- Reasoning theory 12 (deductio hegeliana). (66/68)
Bibl. sample : H.A. Ett, bes., E.A van den Bergh van Eysengha, *Hegel*, The Hague, Krusemann s.d., 67vv.

(1) Hegel (1770/1831; Absolute or German Idealist) responds, in a little work "How ordinary human reason conceives of philosophy", subtitled "Made clear to the worker of Mr. Krug", to an accusation: he would from merely 'a-priorist' (*E.D. 32* (*A-priorist syllogism*)), d.i. abstract-general principles, "deduce" everything, the totality of "being", - Krug gat thereby a singular-concrete example: he challenged Hegel to deduce in that a-priorist way e.g. the existence of every dog in every cat - even the existence of its penholder)

(2) In 1802, Hegel replies.
a/ One does not prove existence: it is a given.
b/ But that same existence is **(i)** non-existent (impossible) and even **(ii)** inconceivable (impossible) without ... the system, which represents the totality of all that is. Therein are situated, after all, all possible existing (or merely possible) dogs, cats, - penholders. Or to put it differently: every separate 'being' (piece of reality) is only a 'moment' (i.e. an element moving along with the moving whole) of the system of the total reality.

Understanding. -- 'Understanding', in Hegel's parlance, is "all that our minds grasp concerning total reality". - What, then, according to Hegel, is "deduction" (= deductio hegeliana)? "To point out and understand from the understanding of this living whole the meaning and place of e.g. dogs, cats, - pen holder etc. is something quite different from proving their existence", according to Hegel himself.

So that 'deduction' here means 'to make clear in the totality of reality, even if it is constantly changing, the place and meaning of something'. That it is a deduction is shown by the fact that Hegel presupposes that one first has an 'understanding' (in his sense to be understood, of course) of the totality of all that is.

Note - reread *E.D. 14* (*Transcendental Quantity*). Hegel is not working with "categorical" notions, here (unless the notions of "dogs," "cats" - "penholders"), but with "transcendental" notions that include everything. Did we not see that to define something" amounts to situating it in the totality of "all that is" (= Hegel's notion)

It should be noted that the ‘concept’ (of the totality of all that is) with Hegel naturally presupposes a gigantic induction: actual existence is not deductible! It must be known by induction, i.e. by taking samples from the totality, and subsequently by reduction (all kinds of explanations).

Conclusion.

The all-encompassing concept that Hegel presupposed is more of an empty (representing the gaps of our inductions and reductions) concept. How to deduce from such an absence of information e.g. ‘dogs’, ‘cats’, -- ‘penholders’ etc.? Practically speaking, this seems to us to be impracticable. We have of the system of total reality only a fragmentary knowledge.

What does remain is that, as long as we do not have Hegel’s ‘understanding’, all our understandings of things remain equally fragmentary. Which means that Hegel is right ‘in theory’: the totality of things is the (all too vague) horizon within which we grasp things.

“Historical Dialectics”

E.D. 84 taught us this concept in passing.- With Hegel it is abundantly clear: in addition to abstract-general concepts, he also (and even especially) puts forward data (facts, -- existence as he himself says) to be situated in time (history), and from these he attempts to “deduce,” i.e., to point out place and meaning.

But so did the great “dialectician” Platon already, as we saw above. In particular: by becoming insane, a fellow human being lost his right to return weapons. The place and meaning of “return (of weapons e.g.)” changes, with the changing temporal, non-everlasting events. With those events, the prepositions of our deductions change.

And that Platon puts “totality” first was abundantly clear from what precedes (*E.D. 10 v.*, e.g., *all/whole*). -

Conclusion. - **a.** Totality (all/whole) and **b.** Time (history) are two distinct but inseparable presuppositions of ‘deduction’ in the dialectical sense.

Summary: “Changing totality or, with Whitehead: “reality process.” ‘Process’, after all, means “ordered change”. Process thinking is not new.

Already *Platon*, in his outline of the *Politeia*, the state (city-state), outlines the essence of the society of the time by means of a process of becoming (what we, with O.Willmann, call “the genetic method”).

"It was bound to happen sometime.

That we also 'deduce' in everyday life and from abstract principles and from facts-in-the-time, is evident from the regularly occurring phrase in the vernacular.

One day, a strike breaks out.

a. To the outsiders, this is a surprise.

b. For the insiders, who called "the tension," "to be cut," this is the result of preconceived notions: the patron remained adamant and stubborn in his refusal. The wrongfully discarded workers remained "outside (so he said). But the comrades, including from the syndicate, did not take that. - The tension rose and rose ... until it was "to cut." And look: one morning the strike pickets are there. "It had to come".

This means: those who know the premises well can "deduce" that from the premises (the wrongful dismissal, the reactions of the employees, the agitations of the trade unions, the rigidity of the patron): the abstract-general law of the employees in conjunction with the singular-concrete circumstances lead to the conclusion.

Thoukudides.

Thoukudides of Athens (-465/-401 ; the greatest Greek historian) once wrote "*The Peloponnesian War*.

Bibl. sample *: J.P. Vernant, Mythe, et pensée chez les Grecs,*(Myth and thought among the Greek), *II,* Paris 1971, 55. - The author says: as their technical thinking, so their historical thinking. It is indebted to logic and dialectics. He refers to M.I. Meyerson who says: "The order of facts (*Note* : the process) with Thoukudides is logical (....). Thoukudides' time is not chronological. That time is almost a logical time".

Meyerson in turn refers to J. de Romilly: she claims that with Thoukudides the story of a battle is a 'theory', - that the victory achieved is a confirmed reasoning.

To which Meyerson adds, "The world of Thoukudides is a world, which is 're-pensé' (reconstructed in thought) and its history a dialectic turned into an act." Cfr. Meyerson, *le temps, la mémoire, l' histoire,* (time, memory, history), in: *Journal de psychologie* 1956, 340,

Note - This is the meaning of *Hegel*'s famous statement, "Alles was wirklich ist, ist vernünftig. Und alles was vernünftig ist, ist wirklich" (*Grundlinien der Philosophie des Rechts*). - In the facts (= reality) there is a logic at work. Facts are logical as long as they remain the logical conclusion of preconceived facts. If not, they become "unreal," (in contradiction).

Nineteenth sample. - reasoning theory 13 (axiomatics). (69/73)
Now hold on to the prepositional phrases a bit.

a. "Let us assume, against every (false) certainty as to what follows, that (it is not so as hitherto assumed ..." Or hypothetically, "If, against every (false) certainty, we assume that . We call such a preposition a 'problematic preposition'".

b. 'If we assume, against a strongly established opinion, that (it has the wrong thing for it)...'. Do we call that a "paradoxical preposition" (para + doxa (established opinion)).

c. 'If, against an obvious truth, we nevertheless assume that ...'. This could be called a 'false preposition'. - We give this triplicity, borrowed from Rescher, because it shows that already in everyday language one can put forward 'prepositions' in various ways.

Axiomatic induction.
Supposedly, someone with the mind of God (in the traditional-Biblical sense) would collect all possible prepositions. Such an act of collection would amount to gathering, in addition to all actual (used by beings with minimal intelligence) prepositions, all possible (never used) prepositions.

Well, all those who practice axiomatic-deductive method take only a portion out of that totality. That was and is and will be "a sample" from the totality of possible prepositions. Thus everyone's axiomatic-deductive act makes sense only on the basis of a choice (sample) from prepositions.

That is what we call "axiomatic induction", i.e. taking a 'set' from the possible 'axiomata' (= postulates) or simply prepositions. In order to work 'deductively' as e.g. we saw in the previous chapter (deductio hegeliana).

Axiomatic-deductive 'systems'.
Especially since Euklides, the West has discovered that one can deduce contradiction-free from any 'system' (system') of prepositions, (= actual axiomata, in which "first notions") presuppose. There one then deduces 'propositions' and so on.

Euclidean (and later non-Euclidean) geometry is one possible example. Outside of mathematics and logistics, people also proceed in this way (we saw this when we said "That, logically, had to come of it").

Of course, there is an almost essential difference between day-to-day deduction and scientific deduction. The latter is much more precise. For example, it prefers to work with abstract symbols, preferably of a mathematical nature. She also tries to 'calculate' as much as possible (thinking by calculation). Ordinary people don't do that every day unless they are sitting behind the bar calculating how much they have to pay for what they have bought.

Yet it has been shown, in rhetorical circles, that everyday thinking - and, among other things, the deduction of each day - exhibits its own accuracy (the Ancient Greeks called it 'akribeia'). But that accuracy remains fundamentally, pre-scientific. That - the distinction "prescientific/ scientific" - is the difference.

As an aside, the name for rigorous logical-mathematical computational thinking is "formalization.

Let us now, very provisionally leave that "formalized" style of thinking to return to ordinary akribeia. - In doing so, we dwell on everyday axiomatizations. They are deductive acts of their own nature. - Let us resume *E.D. 23* (*The ABC Theory*). But now in the light of cultural axiomatic systems.

Logically: "if a (= the given reality) and if b (= the interpreting man with his 'prejudices', - we now say 'axiomata') then c (= the interpreting man's answer to the given reality". This is a perfect deduction.

Note - When B contains religious axiomata, it is easy to speak of 'dogmata' or 'dogmas'. - Matter of naming.

Types of 'B' (axiomatization types).
Ch. Peirce at the time distinguished dirty types of thinking methods. -

1.1. The wayward person is characterized by the fact that he/she adheres to individual prejudices (which work as axioms or dogmas). One who is a-priori for free trade in his/her own way, reads only magazines in which that economy is defended (the others he/she does not even consider "worth" reading, - such is his/her conviction of his/her own presuppositions).

1.2. The right-minded or law-abiding person is such that he/she, easily, follows others in terms of assumptions about life. Sometimes this is imposed: think of dictatorships; think of religious 'fundamentalisms' of all kinds (one never touches the 'foundations').

Or, preferably in the Catholic context, to "integrisms" (one never touches on "integrity" or dogmatic flawlessness), - Diachronically, tradition-bound cultures are forms of "rectitude" or "orthodoxy" (in which "orthos" (right) and "doxa" (established opinion)), something one should not, in passing, confuse, linguistically, with "sincerity" (i.e., spending what one has in).

1.3. The preferred mentality of the human being is such that, in contrast with the two preceding methods, he/she does want to enter into a dialogue (discussion) with those who think differently but then tries to push through their own preferentially cherished presuppositions. A number of liberals already show the symptoms of such a mentality: while they advocate freedom of opinion, they nevertheless try as much as possible to make their own ideas take root in the society around them.

2. Peirce distinguishes from these three "dogmatic" or "axiomatic" modes of thought what he calls "the scientific man. In the latter, opinion (and presuppositions) depend not on "one's own sense" or "what others presage" or "one's own preference," but on the given reality itself. In the words of Parmenides, "they think according to reality itself".

In other words: the presuppositions are adapted to reality itself. Thus, these presuppositions become the representation, as accurate as possible, of "all that is." This type is now sometimes called "the mirror man" (who reflects what is). Given the very human, all-too-human" tendency to harbor the first three methods, this fourth method is "difficult.

An appl. model.
Bibl. sample ;
-- *P. Cortois, A memorial colloquium for Jean Cavaillès*, in : *Tijdschr. v. filos.* (Leuven) 47(1985): 1 (March), 161/164,

-- *J. Gavaillès* (1903/1944) goes by as "the greatest epistemologist in France between the two world wars." He has a great many pupils. Among the best known is his *Méthode axiomatique et formalisme (Essai sus le problème du fondement des mathématiques*), (Axiomatic method and formalism (Essay on the problem of the foundation of mathematics)), Paris, 1938,

The Logicists, the Formalists, and the Intuitionists each give their "presuppositions" of current mathematics. Cavaillès reproaches them for not interpreting mathematics from its own postulates, but from postulates situated outside mathematics.

Says Cortois, “The ambition to define mathematics from an extra-mathematical point of view, to ground it or reduce it to something else is (according to Cavaillè) not legitimate. It is precisely the mixing of mathematical reasoning and philosophical speculation that is responsible for part of the confusion in the problem of foundations.”

In terms of the ABC theory: if A (mathematics) and if B (either Formalism or Logicism or Intuitionism), then C (formalist or Logicist or Intuitionist duped mathematics). “If one is either Logicist or Formalist or Intuitionist, then ‘it must come to pass’ that either Logicist or Formalist or Intuitionist mathematics is practiced.” It is the “preconceptions” (axiomata) that are decisive.

At once it appears that, like all things, mathematics too is susceptible to more than just one interpretation (= ambiguous).

So what Cavail wanted was to “interpret mathematics from mathematics itself” (as Parmenides advocated for all that is). Or “think according to mathematics itself”. Which entails adapting the presuppositions that emerge in the process to mathematics itself. Which is typically “mirror thinking. Clearly that is very difficult.

Another appl. model.

In 1633, the Church condemned Galilei because he taught - incidentally without sufficient reason or ground. i.e., as a preferred candidate - that the earth revolves around the sun. “In the name of Bible texts” he was condemned.

Apply the axiomatics of the ABC doctrine: “in the name of (the then very gangbased interpretation of) the Bible texts” he was condemned. A is the Bible, B is the then prevailing mentality (= set of axiomata): C is the Bible interpretation that springs from B.

Bibl. sample : J. Neuvecelle, *Galilée réhabilité,* (Galileo rehabilitate), in: *Journal de Genève/Gazette de Lausanne* 02.11.1992. - Recently the Pope gave an address to the Pontifical Academy of Sciences. In it he said, “The new science with its presuppositions of method and free inquiry compelled theologians (...) to ask the question, ‘What are our own criteria (rules) regarding Scripture interpretation?’

But most of them did not get that far. (...). Galileo, who was a sincere believer, appeared to have more insight (...): “If Scripture is infallible - so he says in a letter to Benedetto Castelli - some interpreters and interpreters of it are fallible in more than one way.”

One sees, in passing, that the presuppositions - called ‘B’ - evolve from era (and corresponding culture) to era (with the culture). The Pope’s text does not lie.

Yet there is more in that Papal address: science and theology must act “in the most complete autonomy.” What can “autonomy” or independence mean, among other things? That the presuppositions with which they work can sometimes differ thoroughly.

In ABC-theoretical terms: the “B” of the professional sciences differs from the “B” of the theology, Or: each has its own “axioms. And from that deduces its own type of behavior, or: if the axioms differ, then “it must come to pass” that they act in different ways.

Typology of axiomata.
We examine the expository structure. -
A. -- What are called “axiomatic-deductive sciences”
Think of geometry -, begins with the prepositioning of abstract terms and phrases. These appear as purely invented. Which, within deductive praxis, they really are. In fact, most axiomatists think of very concrete sentences which they then abstract. To work with them abstractly for a while. - The beginning is abstract. The remainder is equally abstract.

B. - What are called “ordinary sciences”,
Think of the science of history e.g.-starting seemingly concrete. Yet read its methodology! Some abstract principles are put forward (either clearly expressed or rather concealed as evident). Only then, in “the light of these axiomatic presuppositions”, does the scientist of the non-axiomatic-deductive type begin his work.

The big difference is in the concrete material: the historical b.v. processes historical data. There where the geometric number and space mathematical ‘entities’ (what has not been discussed already about the correct nature of those mathematical ‘entities’) processed. The ‘entities’ (understand: data, realities) of e.g. the historian are, first of all, documents (and interpretations of them), then larger lines in those documents (and interpretations). - The beginning is abstract. The further course leaves the realm of the abstract to occupy itself with concrete data.

Conclusion: As soon as a science harbors presuppositions, it has a deductive bias (even if it appears concrete).

Twentieth sample. - Reasoning theory 14 (deductive philosophy) (74/77).

We remain with deduction. Yet this time following a work that explicitly seeks to provide "a deductive philosophy." Notably: L. Hoyack, *Sounding Universe (Nature- and spirit-philosophical synthesis on mystical-religious basis*), Antwerp, De Sikkel, 1937.

The author, a forerunner, already in the thirties, of what is now called, since a few years, "The New Age", says it clearly: "(Philosophy) will once again be deductive: it will be the formulation and systematization, the implementation and application of fundamental truths obtained by faith". (o.c., 8).

One sees it: "the fundamental truths" are the (New-Age) axiomata, which are taken from mysticism. From there, the proposer deduces.

Or still, "Sounding Universe" is a proving ground for deductive philosophy. - My personal inferences may be debatable. The premises from which I start have, - at least in my eyes - the character of the incontrovertibly true! (o.c., 16).

One sees it: the author, however mystical-religious, stays within the strict domain of logic. From premises (prepositions - here the axiomata borrowed from a number of mystics) the author draws 'inferences' (conclusions).-- Now let us see how he boards this. It is a good exercise in deductive analysis.

A.I. - ***The cultural revolution "Renaissance-Reformation***".

1. Medieval man received the "truth" (i.e., that which was then referred to as "truth") ready-made from the hands of the Church. On pain of eternal salvation or eternal damnation, one either believed or disbelieved. The image of life and the world was presented to the underage by patronizing priests.

2. The Renaissance and, in the religious field, the Reformation, taught the unsaved to find out the truth for themselves. On the basis of personal thought, one was supposed to be empowered.

G.E. Lessing (1729/1781; religious illuminator) said, "If God presented me with truth on the one hand and the search for truth on the other, I chose the search for truth." Understood: the individual search!

In doing so, Lessing interprets the transition from mid-century disempowerment to the modern empowerment that sets in with humanism and reform.

In other words: one of the axioms of modernity is the empowerment of man. Those who "deduce" from this sometimes arrive at conclusions that are radically different from those of the Church as the "teacher of nations". For the Church deduces from partially different presuppositions. - Hoyack, however religious and mystical, deliberately supports the 'banner' of empowerment,

A.II. - *criticism of reason*

What he calls "the laborious reasoning" is the artery of (modern) reason. Through the course of a beginning that is put forward as an unshakable truth, to a long series of reasonings of all kinds, Modern Reason "justifies" ("Justifies") what it advances as propositions.

Note: at the beginning are 'axiomata' (except the oral axiom, e.g. "I think. So I am" (see *E.D. 39*) or a physical science experiment, (e.g., one who views the sun through a telescope sufficiently secured for this purpose). From that "beginning," modern disembodied minds sometimes deduce very different "truths" than the Church or Islamic or Jewish Scholastics (800/1450) in the times before the great cultural revolution from the Late Middle Ages onward,

According to Hoyack, the Modern way of thinking could not go beyond "Hegel's panlogism" ('pan' (everything) + logos (spirit)) that "vaporizes the entire material existence into the rarefied super-reality of the Hegelian-designated 'spirit' " (o.c., 6).

As an aside, the view that modernity reaches its zenith in Hegel is also shared by others. Hegelian 'reason' is something like an all-pervading reality. It provides us with the 'understanding' (see *E.D. 66v*.).

Hoyack now, although a convinced adherent of the empowerment axiom, radically distances himself from Modernity. In this sense he is a postmodern thinker. - Here is how he reasons.

The Moderns thinkers - in Kartesian vein, have "not distanced themselves from themselves". They could not do this yet: their "disposition" (i.e. their "B" or personal - time-bound axiomata) prevented them from doing so. Making themselves, as far as their axiomata were concerned, the object of research, they could not handle.

Consequence: the thinkers of the period lived in a delusion:
1. they believed that their systems were born of the rational faculties;
2. in fact, those "rational faculties" are controlled and directed by "irrational forces"

Hoyack says in this regard, “if one will” (he knows that the term ‘irrational’ must be used with restriction) - because “actually every philosophical system is determined by the disposition” (o.c., 6). He also speaks of ‘divinatory’ (guessing) faculties (a term also used e.g. by Schleiermacher).

As a result, “the outcomes” (the final formulations) of modern ‘rational’ thought are merely determinations of what began before the laborious process of reasoning.” -

In other words: even the so-called extremely emancipated Moderns are not really themselves. They imagine that they are working in a purely rational manner, but the mysterious ‘preferences’ escape them (Sartre spoke at the time of “choix préréfléchi”, a choice that already takes place before every ‘reflection’ (conscious-personal thinking)). The visible and tangible expression of this is called Hoyack ‘disposition’.

Examples. -- The feelings of rebellion against the father, against the priest or the monarch - rebellion against “authority” are “the source” (understand: the axiomata-diffusing source) of “atheism” (one might as well say: of “anarchism” or “libertinism”).

A “disposition” oriented toward material realities arrives, through rational justifications of all kinds, at some form of materialism.

A more “spiritual” (understand: oriented toward the incorporeal) mentality - “disposition” - will always sooner or later arrive at a spiritualism. - The bondage to the idea of God creates theology.

Conclusion of the critique of reason.

With Fr. H. Jacobi (1743/1818; “*Glaubens- und Gefühlsphilosophie*”), (Philosophy of Faith and Emotion), a thinker of very great influence, Hoyack defines man as “a piece of orientation (‘orientation’),” such that our intellectual or “rational” faculties are only “a part of our whole humanity. Before reason provides us with its (oral) axiomata, our deeper, pre-reflective “disposition” already provides us with its axiomata. Such that reason rather elaborates what that pre-rational disposition pre-thinks.

B. - *Hoyak’s premise (axiom source).*

“Mysticism involves experiences that are in turn related to a development of human consciousness that prepares for mysticism” (o.c. 11).

The mystics do not actually reason in a modern-rational way. Rather, they bear witness to their experience.

With a comparison said, “On the mundane plane, we will make no effort to ‘prove’ that the sun is visible in the sky: we ‘experience’ it, and in the evidentiality of experience ‘the proof’ is given.” (o,c., 11). This is similar to Hegel’s thesis that mere existence is given and needs no “deduction” (*E.D. 66*),

“So also are the experiences of the mystics”. It is simply childish not to give credence to the experiences of so many souls merely on the ground that they are “subjective” (which actually means that the human being involved in them is himself an instrument of perception), (Ibid.). - So much for the experience of (part of) reality.

Our problem can be stated differently. - We no longer connect with the Modern school philosophy and (XVII th, XVIII th, XIX th centuries) but with the mystics. We do not look for spirits who ‘reason’ but for souls who know,-- who ‘beheld’ and simply testified to what they experienced. Cfr. o.c., 8.

The structure:

a. Prepared by mystics acting as forerunners, and immediately brought to mystical development, we reach for our own mystical experience as a source of knowledge. Instead of long diversions and reasoning as with the Modern-Rationalists, assume on authority and test what was assumed on authority against one’s own, personal-individual experiences.

b. Putting what appears in it as axiomata, first. “Philosophy (in that mystical sense) thus becomes essentially deductive. More than that: it becomes applied philosophy in the widest sense of that word. In particular: application of the ‘metaphysical’ (*Note* : transcendental) fundamental truths obtained either by mystical instruction (*Note* : the knowledge of authority) or by one’s own experience concerning the various questions posed by life.” (o.c., 13).

One can see it: one who presupposes such a mystical axiomata deduces logically and practically applies what is locked up in those axiomata in terms of information. It is an unfolding of the postulates.

‘Deductive’ - with Hoyack - has the structure of “it must come from it” as we saw higher (*E.D. 58; 69; 72*).

“If mystical axiomata, then mythical deduction. Well, such aximata. So such a deduction”.

Twenty-first sample. - Reasoning theory is (the reason or ground) (78/79)

Do we now do a little bit of foundations study. This is: preconceived notions study. Or: analysis of the conditions of thought. In Platonic language: hypothesis theory.

Logic, traditionally at least, has as 'hypotheses' understanding as far as processed in judgment and especially in reasoning. Mathematics, at least geometric, has as 'hypotheses' point, line, plane. - These are the 'stoicheia' (elements; *E.D. 10*) or parameters. - Logically 'if 'hypotheses', then something understandable, explainable'.

The principle of sufficient reason or ground.

The artery, i.e. the basic condition, of "if, then" sentences is the presupposition-by-example that viz. everything has its necessary and sufficient condition (reason, hypothesis, foundation, basis, possibility-condition). This either in itself or outside itself. -- Logically: that principle sums up all possible prepositional phrases.

Note - Ch. Lahr, *Logique*, 59s, (*L' induction est-elle réductible à la déduction*?). (Is induction reducible to deduction), - Lahr speaks of 'induction' as if it represented all possible reductive reasoning. Let us therefore rewrite his question, "Is reduction reducible to deduction?".

Lahr says:

a. To extract (that) information from (the information in) the data present is to deduce:

b. Enriching (the information in) the present data with new information is reducing.

Lahr believes that both acts of thought are not reducible to one act of thought. - He has predecessors: Hippolyte Taine (1828/1893; Positivist), - George Fonsegrive (1852/1917; Neoscholasticus) and Désiré Mercier (1851/ 1926; Neoscholasticus) claim that de- and reduction are irreducible (they are truly first stoicheia) and that they are the basic elements of all possible reasoning.

Note - This leads us back to Platon: the hupothesis, premise, is there or it is sought. Cfr. *E.D. 26*. -

Schematic:	if A (reason),	then B (given)
	Well, A; so B	Welnu, B; so A.

This prepared our inquiry into foundations. After all, every logical work (sciences, philosophy, rhetoric, - day-to-day life) puts such foundations first. These are the reasons or grounds.

Fundationalism.

Every logical act, but very emphatically the Modern mentality wants to support itself on a necessary and especially sufficient reason or ground. One wants to 'justify' oneself, to account for oneself rationally, to justify oneself.

Especially the Modern thinkers want to present radical proofs. That is then called 'scientific philosophy' e.g. because 'science' in that Modern sense does not appeal to authority, but proves. Gives decisive 'proofs'.

Such a thing is called 'fundation.' The tendency - with Hoyack: disposition (*E.D. 75*) - to act in this way is called 'fundation(al)ism' or 'fundamentalism'. Cfr. *E.D. 70*.

"In the name of"

Those in authority, including Modern-Rationalists, have a compelling need for "vindication. We call this "acting in the name of." What follows that expression is the sufficient reason or ground of action.

Appl. model. - Surely the most glorified and the most reviled figure in modern business is the entrepreneur (the "patron" or "boss" or "director").

a. For the liberal thinker, the boss is the pivot of the whole company, - company without which a Modern economy is unthinkable. When he takes 'measures', he does it, in principle, in the name of "the business" (which includes the viability and even the expansion of that business). He justifies himself in virtue of (Liberal) axiomata.

b. For the Socialist thinker, the boss may be the linchpin of the entire company but is also "a thief" ("La propriété c' est le vol") or "an exploiter" ("Proletarians of all countries, unite"). Also; "in the name of" "social justice" the Socialists act with violence if necessary. Thus all that is socialist justifies itself o.g. (Socialist) axiomata. -

Conclusion: - Every mentality seeks its (sufficient) reasons or grounds. And thereby proves that the principle of reason or ground is the preposition par excellence of all possible (rational) action.

Fundationalismcriticism

'Criticism' actually means 'investigation'. - One can e.g. examine the foundations (reasons, grounds) of any (rational) action. Already the Eleate Zenon of Elea (*E.D. 65*) with his "Thou-even-as-I"-reasoning started the fundationalism critique. He established namely that neither he himself nor the opponents had "sufficient" reasons or grounds to act "in its name". The necessary foundations were not there!

8.10. *Elements of thought theory*

Contents