6. Thinking mistakes

Content

6. 1 The concept of fallacy.

Thinking errors lead to faulty reasoning. Yet such faulty reasoning sometimes has the appearance of being real. Thinking errors may or may not be intentional. It is not always easy to figure them out.

A possibly inadvertent fallacy:

"Paranormal experiences do not exist because I have never had one." This starts from the concealed and unproven premise that that which is not part of the speaker's world of experience therefore does not exist.

We rewrite this reasoning in syllogism form, so that now also the unsaid is expressed. As already mentioned (5.3), here the linguistic expressions are more extensive, but the logic applied is clearer.

- What is not part of my world of experience does not exist.

- Well, paranormal experiences are not part of my world of experience.

- So paranormal experiences do not exist.

As a syllogism, reasoning is conclusive: from the given prepositional phrase, logical reasoning continues. This is clearer, e.g., from the conditional formulation:

- If, what does not belong to my experience, does not exist,

- and if paranormal experiences are not part of my experience, - then paranormal experiences do not exist.

A possibly intentional fallacy:

Let us also give a fictional and humorous example of this: A liquor dealer states, "In one-fourth of fatal accidents the driver had drunk alcohol, and in three-fourths of fatal accidents the driver had taken coffee. So you are much safer on the road if you drink alcohol instead of coffee".

The deception lies in the fact that wrong numbers - those of accidents - are compared instead of those of alcohol and coffee users.

Clarify: For example, out of a hundred alcohol drinkers, ten may be involved in a fatal car accident. Of one hundred thousand coffee drinkers, say, thirty may be involved in a fatal car accident. There are indeed forty fatal accidents, of which one-fourth are caused by alcohol users, three-fourths by coffee drinkers.

What matters, however, is to compare the number of alcohol users who end up in an accident with the number of coffee drinkers who end up in an accident. Continuing the example above, 10% (10 out of 100) of alcohol users cause a fatal accident, while this figure is only 0.03% (30 out of 100,000) for coffee drinkers. And these latter figures do not at all allow one to say that you are safer on the road with alcohol than with coffee. On the contrary.

Paralogism / sophistry. Ch. Lahr, *Cours*, 607, n. 1, says that a paralogism is an unconscious fallacy and a sophism is a consciously accomplished fallacy. Thus, the reasoning about the paranormal experiences above is a paralogism, the reasoning regarding car accidents is a sophistry. Lahr mentions this in a small footnote, but given the rise of materialism since 1950, this distinction becomes very timely.

In the classical view, consciousness and brain function do correlate, but surely consciousness is a very different and broader concept than "merely" a by-product of the

exclusively physically thought operation of the brain. Some contemporary materialist views hold that consciousness is merely an 'epiphenomenon' or companion phenomenon of our brain activity. Then, however, the distinction between conscious or unconscious thought loses its reason or ground. Consciousness, as a mere epiphenomenon, then indeed does not exercise any causality regarding behavior. We explain this further.

Cognitive dissonance. A concrete model. Jef spent three months building an additional wing of his house. According to passersby, it looks archly ugly. But in virtue of "cognitive dissonance" (understand: what he deludes himself into thinking). Jef believes looks very successful. Well, Daniel Dennett (1942/2024) was an American skeptical philosopher dealing with issues of consciousness, philosophy of mind and artificial intelligence. Among other things, he is known to us for his *Consciousness Explained*. Dennett and his thinkers argue that we excrete our thinking "like a snail excretes its slime." As an analogy (thinking / secreting slime), according to our natural logic, there is much more difference than similarity between man and snail, but Dennett and his followers see just the opposite: for them, there is much more similarity than difference. And this because viz. consciousness, according to them, only accompanies, not causes. At the same time, a (conscious or unconscious; it doesn't matter then) fallacy is just one form of information processing that "doesn't fit" with the data (data) to be processed. Consciousness does accompany that information processing, but that is all consciousness really means.

The Lie Detector. 'Lying' has been defined since ancient times as "knowingly telling untruth." Whoever lies commits a fallacy, and a conscious one at that. A lie detector as employed in e.g. judicial centers (not without contradiction) presupposes that changes in the rhythm of breathing (in the chest and abdomen), sweating and changes in the rhythm of blood pressure in the fingers betray that a conscious untruth is being sold. The "belief" in the diagnostic value of the detector puts consciousness first, not merely as a companion phenomenon, but as a cause, producing physiological effects. These are materially testable. For those who do not lie do not exhibit these materially ascertainable guidance phenomena. Even though the renovations in Jef's home look archly ugly to just about everyone else, to him they remain beautiful. Connect him to the detector and ask him if his house is beautiful, his affirmative answer will not reveal a lie. Jef is in good faith and doesn't know any better.

We point to cognitive dissonance and lie detector because in this way consciousness both comes through undeniably and yet theoretically fails to reach its full potential. Both - dissonance and detector - show that there is a distinction between unconscious error and conscious "error. Both have a consequence and are causal, but in a distinguishable way.

Logic and morality. Traditionally, people make the distinction between "an errant conscience" and "a bad conscience." The errant conscience "means well" but "doesn't know any better" while the bad conscience "doesn't mean well" and "knows better." One can see the analogy with the pair of "paralogism" and "sophistry. An errant conscience is a paralogism on matters of conscience, and a bad conscience is a sophistry on matters of conscience. If, however, one holds that consciousness is merely an epiphenomenon, then, of course, the ethical distinction between an erring conscience and a bad conscience also lapses. For consciousness, in that view, is merely accompanying, not causal.

Natural logic honors the identity axiom. "What is (so) is (so)," not as a "making" (a "construct") but as a "forma" (an "essence"). She is not constructivist but essentialist (as people now say). It counts with encountered reality as given. What is required here is that whoever recognizes the given, also affirms it honestly and with reverence for all that is. But he who introduces honesty and reverence introduces morality. Conscience begins with the given and its affirmation. That there is "cognitive dissonance" and "falsehood" only means that the affirmation of what is is not a simple matter, among other reasons, because of situations and passions. But then proceeding logically is already minimally and essentially a matter of conscience, and proceeding conscientiously is a matter of logic: only the conscientious acts logically, i.e. with sufficient reason or ground (which actualizes the reason axiom), while the unscrupulous has no sufficient reason to justify his behavior. For between the pure knowing that something is or is so, and the beaming upon it and acknowledging that it is (so), there is sometimes an abyss. The abyss of the conscious lie or the unconscious and subconscious repression

This postulates that what is is inviolable somewhere as truth. It 'may not' be violated, even as truth, although it 'may' be violated by a behavior that cannot be justified.

6. 2 Ignoratio elenchi, an error of thought

Logic stands or falls with a basic structure (1.1), namely a task (GG ^ GV) ('GG' in Dutch = het gegeven, the given; ' GV', in Dutch = het gevraagde, the requested) that calls for a solution (SOL). "Ignoratio elenchi," ignorance of the given, means that the arguments presented do not actually relate to the proposition, that one is reasoning beside the given. The given and requested are not understood, one misunderstands what is to be proved. One is reasoning outside the requested. Or, to put it again in the words of St. Augustine, "They run well, but outside the racecourse."

General characteristic. "Ignoratio elenchi" does not reason about the actual GV but about that which is similar to it or related to it. One thus reasons purely associatively. As was already stated with the tropological sense of value (2.8), one has an association if, with a given a, one thinks of a given b or if, with the given a, one senses the given b. One says that b is then an association. It is then said that b is an association of a. Thus, a mother may feel great sympathy for someone who is similar to her son. Thus, a lover in love may cherish the scarf of his beloved endearingly, because of its connection. The scarf is related to and refers to the beloved. There is a kind of transmission of meaning, to which reason and feeling are not at all indifferent.

Examples:

- To prove that contradictory judgments cannot possibly be true at the same time, one reasons, "Scientists and believers fight each other incessantly with the result that both seek to make true contradictory propositions, propositions that cannot possibly be true at the same time." One associates "contradiction," or "being inconsistent," with "mutual combat."

- Ch. Lahr, *Cours*, 699, cites: someone is charged with serious forgery of writing; his defender proves with brio that he is an impeccable man as a son, husband, and colleague. These attributes, while related to the accused, are substantially separate from the actual accusation. To the fact a, the scribal forgery, the defender associates the fact b, the good qualities of the accused. However, these are not related to the actual crime and are therefore irrelevant.

- Copi, - he was prof at The University of Hawaii - *Introduction to Logic*, New York / London, 1972-4, 85f, cites: someone is charged as guilty of murder; the opposing lawyer argues that a recent murder in the area is "an intolerable and terrible thing." He steps into the similarity association: the two murders may be so similar or appear so, but that similarity is not evidence of guilt in the second case.

- Copi cites a text from *The Honolulu Advertiser* (22.11.1969, B-l). Kenneth Robinson, then Britain's health minister, stated in the British Parliament that scientology (Note: founded by Ron Hubbard (1911/1986)) was "potentially harmful" and "a potential threat." Elliot, the local representative of The Church of Scientology in Honolulu, reasoned against: "I fear that Mr. Robinson suffered two recent downgrades and, moreover, was silently dismissed from The Wilson Administration (...) just in the course of recent weeks." First, the Scientologist uses an "argumentum ad hominem," i.e., reasoning that exploits an opponent's weakness (see 6.6.). Then it should be noted that again reasoning is done on the basis of mere consistency: Robinson's weaknesses are of course related to him but are clearly outside "the issue", i. e. the

GV, i. e. the scientiologist had to prove that scientology is neither "potentially harmful" nor a "potential threat".

Conclusion. For the umpteenth time it appears that the basic relations of natural logic, similarity and coherence, do play a leading role when it comes to reasoning: valid reasoning and ... invalid reasoning.

6. 3 Circular reasoning

Petitio principii. This is a first form of circular reasoning. A petitio principi is a fallacy in which that which is provable is already taken as given. The conclusion is then essentially just a repetition of one of the prepositions. It is already contained in an explicit or a more hidden way in the prepositional phrase. The general scheme of circular reasoning can be represented by a kind of variant of the identity and reason axiom of logic: "It is (so), because (because) it is (so)." If the same term is used, then the fallacy is obvious. Thus e.g.: All clowns laugh, therefore all clowns laugh.

Or again, "Opium is a sleep inducer because it causes sleep." Slightly more difficult is the fallacy of using synonyms: "Opium is a sleep inducer because it causes somnolence." Somnolence as a synonym for "sleepiness. Similar thinking errors wind up in the following statements: "I am not a thief, so I did not take that away"; "I give the orders here because I am the boss."

"He speaks the truth, because he cannot lie": "Of course I want to say it, because I do not want to conceal it"; "The soul does not die. Reason: it is incorporeal". Being "incorporeal" is already peculiar to the soul. A restatement in this way clarifies such: "The incorporeal in man does not die. Reason: it is incorporeal". A circular reasoning is likewise hidden in: "Poisonous snakes are useful because they provide us with antidotes to snake bites".

Circulus vitiosus.

A circulus vitiosus is also a circular argument and consists of a double petitio principii. It thus contains a double fallacy. One wants to "prove" two judgments by first asserting one as proven, and then the other.

Thus : as the first petitio principii: "The soul does not die. Reason: it is incorporeal".

And as a second petitio principii: "The soul is incorporeal. Reason: it does not die".

In the *Bible*, 2 Tim 3:16 we read, "Every word of Scripture is inspired by God." Here it is tacitly ignored that the authority of the Bible text is substantiated by a Bible text itself. But that authority of the Bible was precisely what needed to be demonstrated. Expressed as circulus vitiosus, we get e.g. as the first petitio principii: "Every word of Scripture is inspired by God, because the Bible is inspired by God". And as the second petitio principii: "The Bible is inspired by God, because every Scripture word is inspired by God."

We meet a similar story in the statement, "The church says that its utterances are infallible." Rewritten as circulus vitiosus, this becomes e.g., "The church is infallible because its pronouncements are infallible," and "The church's pronouncements are infallible because the church is infallible." An analogous story is found in: Allah says, "in the Koran nothing is lacking."

We would like to point out that none of this was to question the immateriality of the soul, the divine inspiration of the Bible or the Koran, or the infallibility of the Church. However, we did want to show that the above statements regarding these subjects are logically wrong.

A circulus vitiousus is also found in: "Scientists state that no harmful radiations were detected with these devices. They are therefore perfectly safe". Or even: "Religion is not scientifically provable. Religion is therefore unreal".

The authority of science rests on the axioms or presuppositions of science itself. Reality in the scientific sense is easily limited to that which can be perceived with the senses, preferably in an exact, experiential form. Everything that is not perceptible to the senses - by means of all kinds of devices, if necessary - is then not scientific, but that does not make it non-existent. Many scientists are aware of this limitation. Only an ideological form of science states that its field coincides with the whole of reality, not with a part of it. The statement above, in order to be logically valid, can be completed and clarified as, "In the present state of science and according to its axiomatics and methods, no harmful radiations have been identified. Whether this makes them perfectly safe, however, no absolutely conclusive statement can be made about this". Furthermore, the axioms of science are such that they lie outside the realm of the religious. We will return to them further on in the text.

To put it more generally with regard to circular reasoning: in a number of cases one relies on one's own authority to make an authoritarian statement: "I know because I know", or "It is

(so) because it is (so). One reasons apart from the given and requested. The common mind recognizes the circulus vitiosus e.g. in statements such as, "He plays both judge and beneficiary."

Or humorous:

Article 1: The boss is always right.

Article 2: If the boss is not right, Article 1 automatically takes effect.

"What (so) is, is (so)." Here we mention again the basic axiom of logic: "What (so) is, is (so)". This axiom of identity is no foolish repetition: our mind, if directly confronted with a GG as GG and if it honestly affirms what it understands in this matter, is in conscience obliged to say that what is (so) is (so). If not, he deals with the GG dishonestly, because unreal. To "prove" such a thing, i.e. infer from prepositions, is impracticable because, to "prove" those prepositions, one already needs the identity postulate. This likewise amounts to a "circulus vitiosus," an unjustifiable circular argument.

The only "form of proof" is obviousness or evidentness. If a person of sound mind, not a prejudiced or neurotic person, is confronted with something that is (so), there is precisely only one responsible reaction: to agree that it is (so). Although unprovable, the identity axiom constantly plays a role.

Misunderstanding the basic scheme. To proceed logically stands or falls with the basic scheme "GG ^ GV - SOL". The "petitio principii" (as GG (petitio) put the GV (principii) first) and the "circulus vitiosus" (invalid circle reasoning) as doubled petitio principii misunderstand the basic scheme. Attempt to explain this further.

Definition. According to R. Nadeau, *Vocabulaire technique et analytique d' épistémologie*, PUF. 1999, 22/ 52/ 238/ 481, there is a circuit argument if at least one preposition (GG) is the postposition (GV). Thus, a circle argument is (1) a circle argument but also (2) more broadly any reasoning that concealedly presents the nazin (GV) as the preposition (GG).

Example of circular explanation: Nadeau cites K. Popper (1902/1994; *Logik der Forschung* (1934)) on this point. The text amounts to what since Sextus Empiricus has been called "dialèlos tropos" (literally: form of reasoning in which the GG replaces the GV).

Explicandum

(GV): "What makes the sea choppy?"

Explicans

(GG): "For reason of the anger of the god Neptune".

(GV: What empirical reasons have ye?)

"How knowest thou that Neptune is furious?".

"Seest thou not that the sea is turbulent?

And isn't that always when Neptune is furious?".

Note: The reasoning, which presupposes Ancient Greek religion, is axiomatic reasoning: the believer simply presupposes the connection "Neptune's anger (cause) / turbulent sea (consequence)."

Definition as reason: Ch. Lahr, *Cours*, 699. A physician states, "All cholera is fatal."

Faced with a cholera without a fatality, he states, "This is not cholera." However, this is a matter of definition. One can agree on what exactly one classifies under cholera and what one does not.

"So far, all cholera is fatal. Well, here is non-lethal cholera. So some cholera is non-lethal".

But one can also reason otherwise: "So far, all cholera is fatal. Well, here is non-fatal 'cholera'. So here is no cholera". This definition is that of the physician. The

GV in such' cases is a reality definition of cholera regarding its lethality. The physician assumes them as GG.

Descartes' circulus vitiosus.

R. Descartes is known to have sought methodical certainties. Thus, one can doubt everything except the fact that one doubts. Descartes summed it up in his famous "Je pense, donc je suis." However, he assumed that the external world, as he perceived it through his senses, did indeed exist, "because God cannot deceive him." A. Arnauld (1612/1694) says of this that Descartes commits circular reasoning. Arnauld states, "What we grasp plainly and clearly is true only if God exists. But then we must first grasp the existence of God clearly and

distinctly. But then we must first be sure that all that we grasp clearly and distinctly is true." (P.Foulquié / R. Saint-Jean, *Dict. de langue philosophique*, PUF, 1969-2,87).

Misleading wording. The circular reasoning is even more difficult to figure out when the wording gets very long. Copi. *Introduction to Logic*, New York / London, 972-4, 83, gives an example of this. Steller quotes R.Whately, *Elements of Logic*, London,

1862: "Granting every man unlimited freedom of speech must always be advantageous to the state, for it is highly conducive to the interests of the community that every individual should enjoy a completely unrestricted freedom of expression of what he feels". If we try to summarize the essence of this rather extensive description, we get something like: "To be able to speak freely is advantageous, for it is advantageous to be able to speak freely." One immediately recognizes in this abbreviated formulation the circular argument, which actually repeats instead of proving. A description, resp. definition, however explanatory, of what the final sentence to be proved says, is not yet a preposition of that nazin!

Definition as preposition. Eleanor Roosevelt (1884/1962) was First Lady of the United States when her husband Franklin Roosevelt was president. In her book *You Learn by Living, Eleven Keys for a More Fulfilling Life*, New York, 1960, 30) she recounts that as a child she had an insufferable temperament and she grew up with the fear of one day becoming an insane person. But she had peculiar dreams of the future that later became reality. "Today "the Eleanor case" would end up in psychotherapy. (...). No truth value would be attached to her waking dreams and her vocation would not be involved.

One would see in it "an escape into the unreal," verging on hallucination. Medication would reduce the severity and frequency of her visions. Psychiatric medicine would treat her as a mental patient and go big on it according to a circular reasoning, that what she 'eradicated' in Eleanor was indeed an 'illness.'" (J. Hillman, *Le code caché de votre destin*, Paris, 1999 (or.: The Soul's Code, New York, 1996), 33). The axioms (prepositional phrases) treat the postpositional phrases as prepositional phrases.

6. 4 Criticism regarding a "Final Reason".

Bibl. st.: E. Oger, *Literature review (Rationality, its foundation and its samples),* in: Tijdschr. v. Filos. (Louvain) 54 (1992): l (Mar.), 87/106. This long article on the discussion i.e. the reason axiom contains a passus on H. Albert, *Traktat über kritische Vernunft* (1969) and id., *Die Wissenschafl und die Fehlbarkeit der Vernunft* (1982). We summarize.

1. Critical thinking: H. Albert (1921) is a "critical rationalist." He shares the neutral-scientific view of the positivists. They stick to the bare facts without value judgments on the matter, together with their theoretical formulation. This formulation is then - preferably - physically, logically (logistically and/or mathematically) testable by the research community of professional scientists.

Note: This attitude dates from I. Kant (1724 /1804) and particularly his *Kritik der reinen Vernunft* (1781-1). Kant contrasts his critical attitude with what he calls "dogmatic attitude." Is "critical" that interpretation of human knowledge which, given its limitation by time and space, rejects any metaphysics (concerning soul, God e.g.) as pre-rational - "dogmatic.

In a broader sense, 'critical' is that attitude which rejects "S (subject) is P (saying)" as 'dogmatic' and replaces it with "I think S, is P." Such is my view. (Thus S. Bachelard, *La logique de Hegel*). In short: instead of certainties, they are opinions.

Note: What does stand out is that if one asks "critical" people "What is critical?", they answer "What is not (anymore) dogmatic. Ask them in a different situation "'What is dogmatic?", they answer "'What is not (yet) critical.'"

Albert is a critical rationalist. But here also a corrective is appropriate: He reconciles the neutral attitude, the detachment from practical life towards reality, characteristic of the cool scientific positivist (who recognizes only "positive facts"), paradoxically enough with the deep commitment - "engagement" - to values, to some design, - call it then e.g. an ideal of life, characteristic of the existentialist (who knows himself deeply involved in existence as an individual).

Note - The basic pairing of existential life that originated with the Danish writer Sören Kierkegaard (1813 / 1855), is "thrownness / design." Namely, all of us as human beings are "cast" on this earth, but in such a way that we can freely interpret that cast and make of our lives a design, - call that a thought for which one lives and strives.

2. Dogmatic thinking. According to Albert, this attitude is peculiar to established and tradition-bound forms of religion, morality and politics, in other words, it is peculiar to our culture.

'Dogmatic' Albert defines as "reluctant to all that is critical inquiry." He explains. Anyone who wants a strong degree of certainties to live on, he calls "dogmatic.

And one is certain of his piece only if one possesses "a final reason," mean a decisive reason or ground. That, of course, involves the emergence somewhere of a truth that can serve as the absolute preeminence of all afterthoughts that life, including theoretical life, encompasses.

Justification of the last reason. Albert sees it in the form of a trilemma: first a regressum ad infinitum, which amounts to an impracticable proof, then a circulus vitiosus or zero proof, finally one can also let a preposition slip, which amounts to a "dogmatic" proof.

1. Regressus in infinitum. The last reason is proved as a derivation from a preposition which is itself derivable from a never-ending series of prepositions.

- The very last reason, of course, is the axiom of reason itself, namely, "All that is, has a sufficient reason in or outside itself or the two"; as J. Derrida (1930/2004), French philosopher, founding father of deconstructionism, among others, puts it, that axiom is common at all our universities. But, if one speaks of a final reason, one means that fulfillment of the very last axiom which must serve our life projects to pedestal, "justification," i.e. utterly rational justification.

An application. A person makes a commitment to the poor. When this person wants to commit some accountability, he must ask himself the question, "On the basis of what actually do I commit myself to the poor?" The interpretation is clear: "All that I do as a commitment to the poor has in it or outside of it or the two a sufficient reason." That sufficient reason is the "final reason" as the motive of action of my behavior.

Discussion. Karl Popper refers to the reason axiom as a form of faith; Karl Otto Apel sees it as a condition of pragmatic communication; Jacques Derrida thinks it has no "ground" but is based on an "abyss. So much for the very last foundation.

In the broad sense, "regression" is return, a return of an afterthought from a preposition or sufficient reason. - Applied - e.g.: " I feel much in favor of helping the poor thanks to handouts and especially structural reforms concerning economy."

A friend psychoanalyst would respond to this and, e.g., try to uncover the unconscious tendencies in order to ground the "final" reason of "feeling that much for it. In his way, because then the question arises, "How valid is that psychoanalytic reasoning that goes from a "good feeling" back (regressus) to the depths of the soul? From that, in turn, can be sought the justification which is a return on the "last" reason of the whole business called psychoanalysis. "In infinitum" means that one can thus return to the reasons or grounds of the reasons or grounds "without end." - From the after sentence - to put it logically - "I feel a lot for it..." one can thus trace infinitely many prepositions as reasons or grounds. - H. Albert finds that method impracticable because never ending. Priceless. An impracticable foundation. According to Aristotle, no proof.

2. Circulus vitiosus - An invalid or irresponsible circuit (reasoning). - I. Kant

defines a vicious circle as follows: 1. one wants to prove something, "foundation," 2. in order to prove it, one starts from that which is provable. - So concretely: "I feel a lot like helping the poor. Because that makes me feel good". With good reason. Such circular reasoning is an application of what Aristotle called "husteron proteron" (what is later comes sooner). A petitio principii: the yet-to-be-proved preposition is taken as given. A double petitio principii is a circulus vitiosus. Thus (First petitio principii) "The soul does not die. Reason: it is incorporeal". (Second petitio principii) "The soul is incorporeal. Reason: it does not die". Oger calls such reasoning a "zero-funding" .

3. Letting go of a preposition. - The final reason is no longer reasoningly deduced from either an endless relapse on prepositions or a yet-to-be-proven preposition but it relies on contemplation and experience. One simply "sees the final reason directly and intuitively." According to Albert, this is "arbitrary proof" or even "dogmatism.

Conclusion: - Since in a critically rationalist sense a final (and even very last, axiomatic) foundation is impracticable, we are left with the "existential" solution: "Continuing with merely provisional, no last or very last certainties." Living - with commitment - with a provisional reason.

Note - Clearly, this way of rational or existential action is that of most people. This is also why we dwelt on Albert's critical rationalist theory a little longer. Remains, however, the axiom: "Only if a sufficient reason, then all that is, rational". Axiom that is open to many, valid and especially half or completely invalid interpretations. One can call that "irrationalism.

Such "foundation," "justification," "justification" - or whatever one calls the search for a reason for existence - stands or falls with the primacy of reasoning that has prevailed since ancient Greece and with even greater insistence since Kant. If reasoning dominates life, it seems to undermine life, and it does so where the reasons for that life are concerned. Postmodern thinking suffers greatly because the unthinking certainties of life, peculiar to modern thinking, are subjected to "criticism" (postmodern criticism then) as "dogmatic" in turn. Postmodern living is, for the time being, living responsibly without final reason or ground and thus living rationally on the basis of an 'abyss'!

6. 5 Paradox

A paradox (Gr. Para = against, doxos = opinion) is a statement that goes against established opinion. It appears to express an apparently contradictory situation and goes against our sense of logic, expectation or intuition. Seemingly, because the perceived contradiction is often based on a fallacy or faulty reasoning. Deals with it, such a paradoxical statement turns out to expose the weaknesses in a reasoning. Such a paradox thus forces one to think, to find the error.

Thus: "One man is not a man": the solitary man left to himself cannot unfold his full human nature. Or still: "One time is no time": a single act does not make a habit.

In *"The open society and its enemies,"* Popper talked about the paradox of tolerance, - in the sense that unlimited tolerance naturally leads to the disappearance of that same tolerance. In other words, if one acts tolerantly toward those who demonstrate intolerance, - in other words, if one is unwilling to defend tolerant society against their attacks, - then the advocates of tolerance, and with them tolerance itself, will perish. This does not mean that theories defending intolerance should never be allowed to speak: as long as it is still possible to combat such theories with rational arguments and to contain them with the help of public opinion, it would be irresponsible to prohibit them. But one should claim the right to prohibit them, if necessary, even by force. Indeed, it is conceivable that the proponents of such theories would refuse discussion and teach their followers to oppose rational arguments with fist violence or with weapons. "In the name of tolerance, we should in such a case claim the right not to tolerate intolerance." So literally K. Popper.

The Bible. Matthew 16: 23/28 also expresses a paradox: "For whoever wants to save his life will lose it. Whoever loses his life because of Me will find it." A seemingly contradictory

statement from Jesus. However, the word "life" is used in two different senses: an earthly life and a heavenly one. Freely translated: Whoever seeks salvation exclusively in the earthly life will lose the heavenly life. He who places his earthly life in the service of the heavenly, will gain this heavenly life.

Think also of the so-called Matthew effect (Mt. 15 : 12): "He who has, to him will be given and he will have abundance. But he who does not have, what he has will be taken away from him." This is a kind of divine judgment: whoever has the right interpretation of Jesus' message will come to a richer understanding, but whoever misinterprets, indeed misinterprets, his words will come to a tragic miscalculation. With some humor, Jan modal speaks of a Matthew effect when rich people can put it on board in such a way that the biggest burden of taxes falls not on them, but on people who are a lot poorer.

The Pythagorean Theorem. Here is an example of a geometrical paradox involving the famous Pythagorean theorem. In a right-angled triangle, the square of the hypotenuse is equal to the sum of the squares of the rectangular sides. Thus $a^2 = b^2 + c^2$ (fig 1.) A number example gives e.g.: a = 5, b = 4, c = 3. We get : $5^2 = 4^2 + 3^2$ or 25 = 16 + 9.

fig. 1   fig. 2   fig. 3

fig. 4   fig. 5   fig. 6
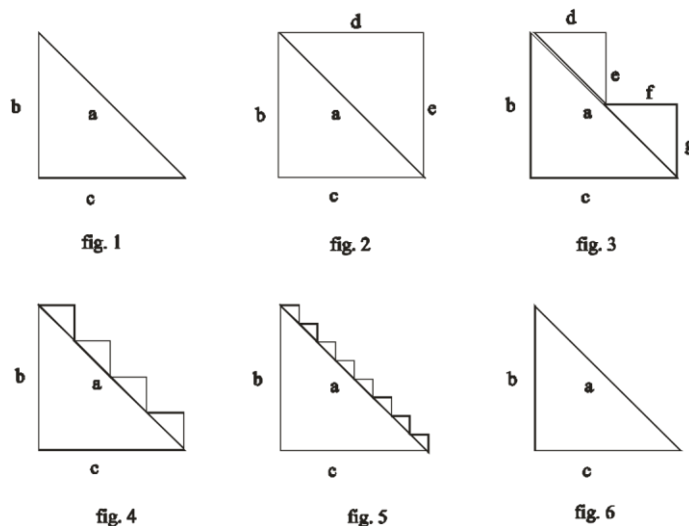
To clarify the paradox, let us go one step further. Thus one sees that in fig. 2 the side d is equal to side c, and the side e to side b. Thus d + e = b + c. In fig. 3 the sum of the sides d + f equals c, e + g equals b. Thus the sides d + e + f + g are equal in length to the sides b + c. In the following figures one can reduce these 'inverted triangles', these 'little stairs', further and further (figs. 4 and 5). The sum of all horizontal line segments will always be equal to side c, the sum of all vertical line segments to side b. Horizontal and vertical pieces together are therefore

always equal to b + c. One can keep reducing these little triangles until they become so small in their limit value that they seem to coincide with the hypotenuse a of triangle abc in fig. 6. From this one could eventually deduce that a = b + c, which in our numerical example then results as 5 = 4 + 3. However, this result is opposite to the Pythagorean theorem and the numerical example $5^2 = 4^2 + 3^2$. Behold the apparent contradiction.

The solution of the paradox lies in the fact that the step line, the sum of horizontal and vertical line segments, will always remain. Even if it would become too small to be perceived by the eye, it is never reducible to the slant itself. Therefore, in figures 2 to 6, the length of the staircase line remains constant regardless of the number of steps. Thus, it can never coincide with the sloping side a.

Olbers' paradox. In scientific cosmology, there was an apparent contradiction known as Olbers' paradox. H. Olbers (1758/1840), astronomer, tried to calculate the total amount of light coming to us from the stars, proceeding from their brightness, their number and their distance from Earth. Surprisingly, after much thought, he came to the conclusion that there is so much light in the universe that even at night the earth must be as brightly lit as during the day. Paradoxically, the facts show just the opposite.

So Olbers had made a mistake somewhere. He assumed that nebulae situated between the stars absorbed a great deal of light and that this explained the night-time darkness. However, nebulae that receive light for too long also begin to light up, and in turn further emit the received light. Therefore, they cannot be responsible for the night darkness. The solution to the problem took some time. Only at the end of the 19th century did people make calculations again in which all the light present in the universe came into focus. But by then Olbers' paradox was long forgotten. Too bad, because if one had thought of that, the discovery that the universe expands at a very high speed would not have been so surprising. Only a hundred years later, in 1924, the expansion of the universe was experimentally demonstrated by E. Hubble. And only then did one realize that herein lay hidden the solution to Olbers' paradox. It is indeed dark at night because the universe is expanding, so the photons, the emitted particles of light, scattered over a greater time interval, reach the earth.

Brief paradoxical statements. The language itself provides many examples of paradoxical statements. For example: "Everything I write down or say here is false." Also known is the paradox of the barber who says: "I shave only those who do not shave themselves. And only those". So if he does not shave himself, then according to his statement he must shave himself. But if he then shaves himself, he no longer fulfills his statement.

Famous further is the paradox of the liar. It was first mentioned in a letter to Titus, (39/81) Roman emperor where a certain Epimenides is quoted. This reads (although Epimenides never said or meant it that way): The Cretan Epimenides says:

"All Cretans always lie". When a Cretan says he lies, is he speaking truth or not? One can continue to argue about it. An analogous problem has the humorous statement, "I don't drink, I don't smoke, and I don't run after women. I just lie a lot".

We will see further in the text (2.1.5.) that such paradoxical statements are possible only because (or because) different levels of semantic language are mixed up.

6. 6 Paradox as implausible afterthought

Bibl. st.: M. Meyer, Paradoxe et problème, in: Sciences et Avenir (Les grands paradoxes de la science (Paris) 135 (2003: juin / juill.), 19. There are several definitions of "paradox" yet Meyer's account is particularly illuminating. We reproduce.

Paradox. One of the traditional definitions is: "A postulate, if it is apparently logically valid but contradicts an established statement, is a paradox". Whether the established statement is then a circulating opinion or the proposition of scientists or sages is secondary because the essential thing is that it is contradictory to an established opinion. In this light, Meyer compares the paradox to other statements treated in logic.

Eleatic philosophy. Well known are the paradoxes of Zeno (-426/-491) of Elea, (South - Italy). He was a pupil of Parmenides of Elea (-544/-450), founder of eleatic philosophy, one of the schools of thought of the presocratics , the philosophers who preceded Socrates and his time.

From Parmenides we know the statement, "For (being) thinking and being are the same thing." He states that the thinking mind indeed attains 'reality'. According to him, 'mind' and 'being' belong together, just as the eye and visible things belong together. Just as the eye perceives the reality of visible things, and cannot see what is not there, so Parmenides argues that thinking somehow also always attains reality. For Parmenides, what does not somehow represent reality simply cannot even be thought. Thinking is like a sense organ that fathoms that invisible world. Following an ancient tradition, understanding something, in any form,

comes about only because that which is equal knows the equal. Similarly, for Parmenides, "mind" and "being" are identical.

He stated, "Being is, not - being is not." Or still: "It is a necessity to say and to think that being is". He thus formulates in his own way the principle of identity, the basic axiom of ontology as well as of logic: "what is, is" and is thus considered the founder of ontology or theory of being. His statement may seem banal, but, we forget that he does not mean the worn-out everyday concept of being, but reality as it is "kath heauto," "in itself," and not according to us or according to anything else. For Parmenides, reality is independent of individual or group indications. Our senses can deceive us. But our "sense of being," however, our mind, reason, and spirit do not. At least not if one proceeds methodically. In other words: the object decides, not the subject.

The ontologist "sees," "thinks" the being as being, as it is in reality. He reveals, he removes the being from its concealment. "What shows itself already (so) being, shows itself as (so) being." The senses grasp only the non-being or appearance but the mind grasps, reliably, the real being. Immediately Parmenides, as the first purely abstract thinker, introduces transcendental "truth" as a basic concept. He conceives of 'being' as infinite, incorporeal and imperishable. However, he does so in such a rigorous way that the manifest finitude, becoming and demise shown to us by the fusis, nature, becomes mere appearance.

Parmenides "identifies" this transcendental reality as singular and immobile. In doing so, he goes directly against the views of the Milesians, who held that reality showed multiplicity and mobility.

You, nor I.

Zeno of Elea (+/- -500) defended his teacher Parmenides by means of fundamental research. The opponents argued that being (= reality) was somewhere a multiplicity; the Eleans that it was somewhere unity, but Zeno believed that the opponents, as well as his teacher, do not provide a decisive proof for what they claim. This is going to develop, over time, into what is later called "eristics": You, the naysayers, give arguments but they are not decisive. I, the speaker, also give arguments but they are not decisive either. "Neither you, nor I, prove rigorously logically conclusive what ye assert". So both propositions (opinions) are undecidable as to absolute truth for the time being. Consequence: only restrictive sentences objectively convey truth. Elaborating the logically strict spirit of his teacher, Zeno designs reasoning, which is to prove the sham nature of motion, creation, decay, and development in between. Aristotle summarizes Zeno's "paradoxes" (others call them "sophisms" or fallacies) with the sentence:

"If thou, opponent of my teacher Parmenides of Elea, assert this, it follows that which thou refutes.

Achilleus and the tortoise.

It is in this context that Zenos' thesis that the fast Achilleus will never succeed in overtaking the tortoise is situated. Zeno reasons as follows: the tortoise has a definite lead at the start. Meanwhile, when Achilleus has caught up with that lead, the turtle has crept a little further. So Achilleus will again have to catch up with the turtle this little bit. But then, in the meantime, the turtle has crawled a little further again. Achilleus will have to catch up again. And this goes on and on.

Rigorously reasoned, there will always be a bit of "catching up" so that Achilleus never catches up with the turtle. However, the facts overwhelmingly show that the turtle does get caught up. Hence the paradox.

Throughout history, thinkers have pondered this paradox. This may seem somewhat strange today. Only in the 17th century was mathematics so advanced that Zenos' paradox could be solved after the development of differential calculus.

If, for example, the turtle has a head start of 100 meters, one can mathematically and experimentally demonstrate that Achilleus overtakes the turtle after a distance of 1000/9 meters.

Behind Zeno's reasonings - there are others: all address themselves against multiplicity and against motion - sticks a proof from the incongruous: (i) if things are either many or moving, (ii) then they imply mutually contradictory inferences or incongruities, (iii) which proves that the preposition ('if') is untenable.

Both positions have nothing to reproach each other for. Which means that Zeno himself was convinced of the absurdity of Parmenides' premise. He only wanted - Aristotle later stated - to prove that the opponents also took equally absurd positions. If the conclusion is compared with actual experience, which repeatedly shows that Achilleus does catch up with the tortoise, then that decision is "paradoxical," contradicting the undeniable facts. Meyer's definition is immediately appropriate.

Other axioms. Actual space is governed by other presuppositions than the fictional space Zeno presupposes. Meyer: in the language of K. Popper (1902/1994), actual space refutes (falsifies) space as Zeno thought it. Or in the language of Th. Kuhn (1922/1996), Zeno should introduce another "paradigm" (set of premises or prepositions). For "If Zeno asserts that, then it follows that the facts refute him."

Dilemma. A dilemma ("either, or") reveals itself. Oddly, the Zenoic and the actual after phrases "Achilleus never catches up with the turtle" and "Achilleus catches up with the turtle" may exist but together they are non-existent because contradictory.

Circular reasoning. The "circulus vitiosus" puts the GV first as if it were GG and reasons on. Paradoxical reasoning exposes this by clearly articulating the dilemma. Zeno posits as GG that the interspace is endlessly divisible into two halves and reasons through. But that appears to be precisely the question. Indeed, the facts are in glaring contradiction to Zeno's final sentence (conclusion) which compromises the prepositional sentences from which he follows.

A model. Meyer introduces a comparison. Suppose one asks someone the question, "For what reason hast thou killed thy wife?", where it is not even given that he killed his wife. That is circuitous reasoning that prefigures the GV as already GG. Zeno deduces from presuppositions (prepositions, axioms) that he presupposes as GG there where they are still GV.

Meyer. A paradox is a question that passes itself off as an answer and signifies an undermining of the prepositional phrases that logically prompted the paradoxical afterthought. This explains the title of the article, "*Paradoxe et problème*."

6. 7 Argumentum ad hominem

Bibl. st.: I. Copi, *Introduction to Logic*, New York/London, 74/76. Literally: "Argument against man released". Definition: the opponent asserts something but exhibits certain circumstances at which one takes him. Taking someone by his weaknesses!

- **1.** Circumstance that has something to do with the assertion only through the person. One questions the philosophy of Francis Bacon (1561/1626) because he was stripped of his chancellorship for fraudulent behavior. He is the author of *Novum organum scientiarum* (1620), known for its emphasis on the inductive method in virtue of observation and experiment. He thus anticipates the further development of the sciences. But that nowhere intertwines with his questionable behavior whose reproach is logically irrelevant: it is coextensive with the GG and the GV but is related to the latter only through the person of Bacon.

- 2. Circumstance that has to do with the assertion via the person but affects his assertion. The opponent who claims something, one takes by his behavior that is inconsistent with his claim e.g. "Listen to my words but do not see my actions." Through the detour of circumstance, one hits the GG and the GV. Someone runs high on the Bible and its axioms instead of directly addressing those axioms (the actual GG and GV) one compares them to the actual behavior of the opponent where it appears that he himself does not put them into practice. However indirectly the behavior stands out with his claims logically speaking. Argumentum ab absurdo. Proof from the absurd (the contradiction between assertions and praxis in this case). "If thou, Bible-believer, assert this, it follows that which thou refutest." Logically there is validity insofar as assertions (life axioms) and conduct may not be contradictory.

- 3. Circumstance that has something to see through the person with the assertion as "rationalization.

A person in hypnosis receives a term suggestion, i.e., an order to be carried out after waking up and a number of hours, days, weeks thereafter. When the time for execution arrives, the person becomes nervous and has "a sudden impulse." If the command is not too much in contradiction with the axioms of his life, he will carry out the posthypnotic command with a strong insistence. Questioned for what reason he acts in this way, he will "rationalize" his behavior, i.e. give a "rational" explanation, at least so he thinks. The reason is such that he seems to act "on his own initiative." Faced with the noted facts proving his hypnosis and the term suggestion contained in it, the person will discover the true reason! One takes him by his weak spot, namely, his "forgotten" hypnotism that contradicts his claim to act "on his own initiative.

Note: One can ask oneself what is the dose of our statements that we make without being aware of their true 'reason' at the time. In psychology, for example, one speaks of "transference," the attitude that one adopts toward a fellow human being is transmitted - whether or not by real resemblance or connection - to another fellow human being. Someone once had a wry confrontation with an ecologist without really being able to defend himself and in the wake of that he transfers his 'wry' feeling to all greens! In doing so, he later takes a green opponent not by his claims but by his party affiliation to try to debunk his claims. The true "reason" may elude us in such "transferred" behavior and confuse our logical ability. With the argumentum ad hominem, one should never forget that aspect, namely, the one who wields it may himself be taken by his "weak spot" when he takes someone by his "weak spot." Conclusion:- Paying attention to the (true or untrue) similarity and coherence can prevent thinking errors and expose the (true or untrue) GG and GV. Logic - especially as an order theory.

6. 8 Connection terms

- note terms such as "and," "or," "not," "all / some," "are," and the like. With K. Döhmann, *Die sprachliche Darstellung logischer Funktoren*, in: A. Menne / G. Frey, Hrsg., Logik und Sprache, Bern / Munich, 1974, 38ff, we dwell on 'and' and 'or'.

1. Conjunction ("and"). "Something and something else". "Both the one and the other". "Not only the one but also the other". "Both: both the one and the other". Present in colloquial language: "Be man and one appreciates you". In reality, this sentence covers a reason ("Be man") and the inference ("and one appreciates you"). "There is thunder and lightning." In reality, the 'and' interprets the physical connection between the two phenomena. One can see that 'and' can salvage a multitude of relations (partial identities).

2.1. Disjunction ('or'). In logistic texts represented by 'and / or'. "Either this or that, but at least one of the two". An extortionist with the revolver threatening to two victims: "Either you or you (but at least one of you both)!". In another case: "Your money or your life (at least one of the two)!". 'Or' here means: "If ye pay not with your money, then ye pay with your life!". "(Of thy marbles) give me seven or eight (at least one of the two)" . Somewhat more learned: "(Of thy marbles) give me seven, resp. eight)" . The term "resp. stands for 'respectively' that expresses a disjunction. A variant: "(Of your marbles) give me seven or rather eight". This disjunction covers a preference for the second term.

2.2. Exclusion ('or'). "(Require from me) my watch or my portable phone but at most one of the two". Somewhat more complicated wording: "(Demand of me) either my watch or my portable phone or neither but in no case both at the same time!". To a man of guard: "Either you were at your post this night or not (but in no case both at the same time)".

One summarized the difference between disjunction and exclusion by "At least one of both" (disjunction) and "At most one of both" (exclusion). Note that the examples are limited to situations between humans but they apply equally to e.g. machines that realize such choices automatically.

2.3. Contrast ('or'). "Only either outlet provides power". "Either my watch or my portable phone (but not both at the same time nor neither)". Latin had its own term for this 'contravalent' or 'contradictory' expression, i.e. 'aut' (as opposed to the Latin word 'vel' (which means and / or

and applies to all previous cases: 1, 2.1. and 2.2.). Thus: "Something is either so or not so (only either or neither)". This is the language form for a dilemma.

Summary. At least one of both (disjunction) or at most one of both (exclusion) or only one of both (contradiction). So much for a word about connection terms.

6. 9 Similarity and consistency

Definition. Something, if thought including something else, is either an instance of a set or a part of a system. The common property that appears thanks to the inclusion is either similarity or coherence. Similarity is that 'coherence' that connects the instances of a collection. Coherence is that 'similarity' that connects the parts of a system. Such seemingly interlocking definitions result in confusions of all kinds between similarity and coherence. Whole is collective concept, all is distributive concept (Plato).

Loose symptoms / syndrome. A person, in terror of being declared ill, deludes himself as follows. "This symptom does not yet prove that I am seriously ill. But neither does that symptom. And the third symptom doesn't prove anything either. So the symptoms prove the same thing each time. So I am not seriously ill". One sees the recurrence at work which, like the first data, also indicates all subsequent data as similar. Without considering that the three symptoms are located in the same system, the body of the sick person. In other words: that the symptoms can form a syndrome, i.e. a conjunction of symptoms, and thus indicate a severe disease, does not come into its own. The sick person treats the symptoms - all of them - as if they cannot form a syndrome - whole. He reduces the possible collective concept (system) to a mere distributive concept (collection). One sees the fallacy.

Note: An open door is necessarily open. Well, what is necessarily open cannot be closed. So an open door cannot be closed. From "not possible at the same time" one concludes to "not possible after each other." Or vice versa. It is possible for a sitting person to be too leggy. So a sitting person is too leggy. From "possible after each other" one concludes to "possible at the same time." Note: The terms "necessary" and "possible" are not mentioned here in themselves, separately, but in conjunction with the time-determining terms "at the same time" and "after each other. Such conjunction obviously changes the scope of the terms taken separately: "necessary" and "simultaneously necessary" are not the same thing! "At the same time possible" and "after each other possible" differ!

Scale terms. Lovely is small-scale beautiful. Exalted (grandiose, sublime) is large-scale beautiful. Thus a daisy is small-scale clean. Thus the high mountains are large-scale clean. Humor expresses reaction in the face of what is small-scale disappointingly unclean and elicits laughter. Tragic is what is large-scale disappointingly harmless and brings tears. One can correctly grasp the basic aesthetic concepts only within their scale, i. e., their coherence.

6. 10 Consistency is not similarity.

Thinking error. One of the most deceptive fallacies is to confuse coherence with similarity.

We explain briefly. Let us take the formula "$ax^2 + ax$". It can be reduced to "$a(x^2 + x)$" because a is identical in both, ax^2 and ax. What is identical can be summarized. Not so all that is coherent because the coherent data exist substantially apart. The plus sign "+" keeps ax^2 and ax apart.

Geometric application.
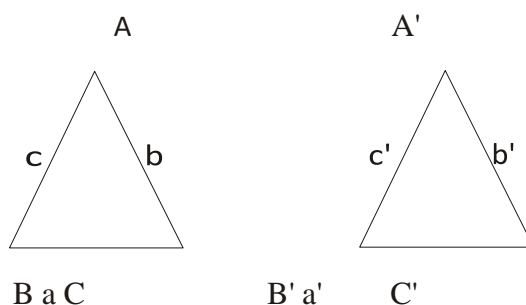
One goes into the first triangle ABC, the angles A, B, C and the opposite sides a, b, and c. Thus, in the first triangle, the side a (original), if thought to include the opposite angle A (model), allows one to talk about a in terms of A because they are related (the longer a the greater A). Incidentally, the correlation is reciprocal. In other words, the angle A is a coherence or metonymic model of the side a and vice versa. They are both analogous (part-identical) as both metonymic models. In triangulation, such correlations are used to calculate the not yet known sides and/or angles in a given triangle via already known sides and/or angles.

One considers both triangles: the triangle ABC and the triangle A'B'C'. For example, think of the side a in the first triangle including the parallel side a' in the second triangle: one can talk about a in terms of a' because they are similar to each other. They are mutually similar or metaphorical models of each other.

Irreducibility of coherence to similarity. For example, if in the first triangle one identifies without question side a and the opposite angle A, or in the second triangle side a' with angle A' (as totalities), one creates contradiction and has neither!

Psychological application. E.G. Droste, The language of consciousness, in: Our Alma Mater (Louvain) 53 (1999): 2 (May), 166/203, says what follows. The concept of consciousness is an unmanageable concept. Droste starts from Emil Dubois-Reymond (1818/1890), materialist German physiologist, one of the founders of experimental physiology, who claimed in 1872 that (1) consciousness is something unknown and (2) will remain something unknown.

Dubois-Reymond, like any human being with sufficient consciousness (which always involves awareness of consciousness) knows that there is consciousness and what it is. If not, he would not make a double judgment about it! One only judges - especially as a scientist - what one knows. But the issue is elsewhere: Dubois-Reymond, as a conscious human being, identifies himself with the materialist physiologist he is, and actually says, "If I speak as a materialist physiologist, then (in terms of physiology) consciousness is something unknown and will remain (in those same terms) something unknown."

For inevitably, as a materialist, he speaks of consciousness in metonymic or coherence models, - not in metaphorical or likeness models. For example, consciousness is a light that goes up ("I became aware of it and a light went up to me"; "Consciousness sheds a light on the things of life"). "Light" is a similarity model. However, if a person in full consciousness receives a blow to the head he loses consciousness! That blow is a metonymic model (coherence model) of consciousness. A person takes drugs; he enters an altered consciousness! The drug is a metonymic or coherence model of consciousness. Such facts have been known to mankind for centuries and centuries. But such facts do not prove that that battle or that drug is consciousness. In other words, stroke and drug are not likeness models and say only indirectly something about what consciousness itself is in itself.

Current biological and, among other things, neuroscientific research is in danger - when one hears its proponents speak - of confusing similarity and coherence. The gap between the two demonstrates the fundamental fallacy.

6. 11 Neurotic and sound judgment

Aristotle titles his little work on judgment with the term "hermeneia" (Lat. interpretatio). Dwell for a moment on that aspect of every judgment. Bibl. st.: A. Ellis / E. Sagarin, *Nymphomania* (*A study of the hypersexual woman*), Amsterdam, 1965.

ABC theory. The authors are cognitively minded as shown in o.c., 137/139 (The ABC theory of personality). In summary, "If A (the object) and B (the interpretation of that object) are known, then C (the behavior) is intelligible." The work talks about a sexual deviation, nymphomania. Which in a nutshell boils down to this, "If a woman gets into bed with a different man each night, she is 'satisfied' but 'unhappy'." ABC theory tries to explain this phenomenon cognitively, i.e. pay attention to the "senses" that more or less unconsciously guide nymphomaniacs to expose them as one of the decisive factors. In other words, the judgment that such women make about themselves, their successes in life, nymphomaniacal behavior etc. is examined in its phase B (axioms).

1. *The neurotic mind.* A. Someone incurs a very painful miscalculation ("frustration"). B. "I can't handle that. It's that bad!". Such a phrase was already there somewhere in the judgmental mind before the painful fate occurred. When the nymphomaniac expresses herself, the a-priori undertone is striking: she gives up before seriously trying to get out of the problem. C. "I just can't get it out of my mind and I escape into nymphomaniacal behavior to make it more bearable." Stellers call this schema "neurosis. The neurotic believes that "it" is so "bad" that it is unbearable.

2. *Common sense*. A. Another woman runs into similar disappointment. B. "I can handle that. It's not that bad now". Such a phrase was already in the mind before the disappointing fate. And she overcomes it. A certain settling and maturity regarding life events speaks from her judgment. C. "I will handle it." And her behavior shows "common sense" (as stellers say).

Thinking error. One sees the thinking error in neurotic judgment: every human being according to the ABC theory lives with - mostly unconscious or semi-conscious - "prejudices," i.e. judgments that are already present before the conscious judgment and the behavior springing from it.

Existential but also theoretical. Such errors in thinking are easily made in 'existential' situations, i.e. circumstances that concern us very personally and touch us in our souls. A severe

miscalculation of something for which one has committed oneself "totally" easily provokes such a fallacy. Indeed, one reads E. Kübler-Ross, *Lessons for the Living (Conversations with the Dying),* Biltboven, 1970, 48/140. One can apply the ABC scheme.

A. Suddenly death seems near. B. The reaction to it proceeds - often - according to a sequence that makes the "prejudices" surface: denial ("Surely it can't be!"), anger ("Who / what is doing such a thing to me now?"), things (marching: "O.L. Lord, please give me a reprieve"), dejection ("I'm a bird for the cat"), finally, at best acceptance ("I'm dying now like everyone else"). C. The visible and tangible behavior reflects those "senses" (as Ellis and Sagarin say), i.e., a kind of personal-intimate axioms that help determine (healthy or neurotic) judgment.

But check some theories in its psychological root, and one encounters such "phrases". "What kind of philosophy one chooses depends on what kind of man one is because a philosophical system is not a dead household item that one can put on and take off but something animated by the soul of the man who adheres to it." Thus J.G. Fichte (1762/1814. German idealist thinker). Replace "soul" with "sense," and one sees that Fichte saw possible errors of thought on a purely theoretical level. *La Logique de Port-Royal* already said it: people's reasoning is usually valid but their axioms are often errors of thought.

6. 12 Unconscious concepts

Bibl.st.: O.F. Bollnow, *Zum Begriff der hermeneutischen Logik*, in: O. Pöggeler, Hrsg., *Hermeneutische Philosphie* (Texte), Munich, 1972, 111f. Life-philosophical hermeneutics (interpretive science) pays attention to the reasons that make both our thinking and our actions beyond our consciousness intelligible. Axiom: "Man is stuck in his 'pre-understanding' or 'unconscious understanding,' on which, however, he can 'catch' himself." This developed, among others, H. Lipps (1889/1941) in his *Die menschliche Natur* (posthumously 1942): "'Man catches himself working according to his conceptions. He catches himself in his pre-understanding and he continues to falter because he notices that pre-understanding. Immediately he is caught". Bollnow explains.

Language to the point. - 'Betreffen' in German (not meaning 'catch' without more) means 'to find' to begin with and immediately 'to catch'. Usually this is limited to "catching someone in a (usually questionable) act." Impersonal: "Es betrifft mich" in the sense of "It overwhelms me", "It surprises me and in an unpleasant way". Personal: I encounter, resp. catch someone doing something (which he usually prefers not to be caught doing). There is even criminological language: "'The offender was caught in a forbidden act'."

Hermeneutic language. This linguistic background is retained by Lipps when he typifies man's nature: man catches himself behaving or even thinking and - this is the hermeneutic slant - immediately he catches himself in his nature. Again and again it turns out that he catches himself in something that he did not expect of himself, - in which he is startled of himself, - about which he may be ashamed. In this Lipps compares man concerning self-knowledge to the criminal who is caught in an act that he would rather keep secret. Something that conflicts with the image one has of himself.

The pre-concept. This is central to Lipps' logic: our thinking (and our doing) is pre-determined by notions to which we catch ourselves already alive and often with feelings of shame, - pre-concepts that seem logical in themselves but once explored also exhibit ethical scope. Lipps' analysis of shame and embarrassment in human nature elaborates on this. More than this, he pays attention to the general connection of logic and ethics (moral theory).

Note: This basic insight fits into the ABC theory of Ellis and Sagarin: it concerns - and catches - the "B," i.e., the preconceptions that, in processing "A" (the perceived or unpleasant), co-determine "C," the visible and tangible behavior. One might say, "If A (the perceived) and B (the preconceptions) are known, then C (the behavior) is intelligible."

6. 13 The fact and its obviousness

Bibl. st.: I. Copi, *Introduction to Logic*, New York / London, 1972, 76f. (*Argument from ignorance*). "Argumentum ad ignorantiam" means "reasoning based on an evidence insufficient for universal acceptance."

No one yet provided universally accepted evidence for the existence of e.g. spirits, angels, God, telepathy, telekinesis and so on. To which Copi: 1. Pro. "Those who deny it do not prove non-existence. So they exist". b. Contra. Those who deny it state, "If they existed, this would involve evidences that are not there; therefore they do not exist." Both lines of reasoning fall strictly logically short. "Amazing is how many people among the most enlightened minds fall into a 'fallacy on the matter': many scientists deny religious or paranormal phenomena 'simply on the grounds that their truth has not been established' (simply because their truth has not been proven)." Thus literally Copi.

Some phenomena. A subset of the data so disputed does in itself exhibit universally clear evidence but does not elicit universal acceptance as such. One reason: namely, there are two sets of language regarding terms such as "rational" and, "scientific. The group pro states, "All that is universally evident in itself is rational and scientific." The group contra: "Anything accepted as universally evident within the established research community is rational and scientific."

Judicial. "Nemo malus nisi probetur" (No one is guilty unless proven). From insufficient evidence, undecidability follows judicially. The court acquits "for lack of evidence."

Physicalisms. Physicalism as a conscious and unconscious concept accepts only physical evidence. Which portrays itself in the physicalist method. Consequence: insofar as paranormal and sacred data are evident but not physically evident, they are neglected, if not denied already.

Logisticisms.

Let us begin with a fallacy, peculiar to logicians and cognitive scientists : "In (traditional) syllogistics or the doctrine concerning reasoning, a reasoning like "An elephant is bigger than a swan. A swan is bigger than a mouse. So an elephant is bigger than a mouse" is not valid. Such writes - dare I write - Drs H.R. Van Ditmarsch, specialist in "technical cognitive science," University of Groningen, in an article: *Mathematics in Wonderland*, in : *Nature and Technology* 66 (1998) : 1 (Jan.), 70.

G. Jacoby', *Die Ansproche der Logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 53. states, "If A greater than B that is greater than C, then A greater than C".

Well elephant / swan / mouse is a valid fulfillment of that first preposition. So 'A greater than C' is applicable". To a child, a folk man, that reasoning, peculiar to natural logic, is 'obviously' valid. And yet: logisticians project 'their' language peculiar to natural - logical language and misuse it because in logistics there is a separate logistics of classes ("S is P") and of relations ("S is greater than P").

What is sayable in classes is not so in relations. Not so in natural logic:

"If A is thought including B and it turns out that A is "greater than" B, then "greater than" is a property of A insofar as it includes B". Likewise for the relation "B versus C." In other words, a term in natural logic can include a multiplicity of words such that "S is P" can also

express relations. What is naturally - logically evident is not therefore logistically evident. Conclusion: axiomatics plays a role with respect to obviousness. Physicalist and logistic axioms partly decide what is called "obviousness.

6. 14 Skeptical method

Skepticism is that current in philosophy which accepts only what is immediately given and cannot be doubted. For the skeptic, everything that goes beyond the obvious data, the phenomena, is questionable and ambiguous. Therefore, skepticism never achieves any certainty regarding ontological insights. The Greek philosopher Pyrrhon of Elis (+/-360/-270, Elis is a city on the Ionian Sea)) is said to have been one of the first adherents of this philosophical current.

Pyrrhon believed that things are indistinguishable, unknowable and undecidable and therefore we cannot arrive at a true judgment. He spoke of a suspension of judgment, an "epochè. He argued that in the case of an opinion, the contrary opinion could also be defended with equal right. He did not really aspire to knowledge, believing that man cannot come to a true knowing, and maintained a resigned attitude, an 'ataraxia' or imperturbability.

Not writing anything himself, his ideas have been preserved mainly through the writings of Sextus Empiricus (+/-150 A.D.). Sextus described skepticism as that view of reality which allows opposing opinions to coexist for the sake of their equivalence, and thus one can never reach a final judgment. Which leads to its suspension, and a resigned attitude to life.

E. Naya, *Le vocabulaire des sceptiques*, Paris, 2002, explains in alphabetical order, a number of terms related to skepticism. This shows just how complicated the skepticism of ancient Greeks was. Naya writes that one can be practically certain that a vocabulary of skeptics, Pyrrhon would be utterly indifferent. Given Pyrrons' imperturbability, this can hardly be surprising. Similarly, Sextus would probably expose any statement as well to a contradictory argument. All this then can only lead to a suspension of any judgment regarding the very existence of such a skeptical vocabulary. (O.c., 3).

The primacy of the 'phenomenon' (the immediately given). V. Brochard, *Les sceptiques grecs*, Paris, 1887-1, 1923-2, 2, defines 'skepticism' as that mental attitude which adheres strictly to what is immediately manifest (what is called 'fainomenon', 'phenomenon'), i.e. one adheres to the given insofar as it is immediately evident. With the consequence of putting in parentheses ('epochè', judgmental suspension) all that exceeds the phenomenally given. This

mental attitude leads to foundational examination of all non-skeptical attitudes (called 'dogmatists' by ancient skeptics) and to an agnosticism that states, "What exceeds the phenomenal, we do not know and we (may) never know."

E. W. Beth, *The Philosophy of Mathematics from Parmenides to* Bolzano, Antwerp/Nijmegen, 1944, typifies - from his mathematical-historical point of view - as follows.

Dogmatism. That mental attitude first assures itself of axioms that can withstand reasonable criticism, and of an effective method of inquiry. Thereupon it teaches "something positive" and thus does not limit itself to criticism of axioms, method and mental faculties because such criticism is meaningful only insofar as it prepares the construction - "something positive" - of truths.

Skepticism. "'Skepticism has traditionally been the enemy of - in this sense understood dogmatic philosophy. That it directs its polemic not only against this dogmatic philosophy but also against mathematics, indeed against positive science in general, is understandable."

The skeptical - critical method. Beth: "'The method of struggle which it employs against both its opponents - philosophy and every positive science - is the same: the contradictory views defended - with respect to certain questions - by different practitioners of philosophy and positive science, it plays off against each other'. In other words, the ambiguity that certain data in mathematics, positive science and philosophy necessitate a plurality of - sometimes contradictory - opinions (hypotheses, theories) are "played out. Not to lead, as with dogmatists, to further investigation and 'construction' of 'something positive' but to acquiescence in 'epochè,' suspension of judgment ("'We (may) not know'"). Skepticism, then, in Beth's interpretation, is an "eristics" a "contention" or better "redetention" of which he does value "the method of counter models," mean: refutations with logicians. If, confronted with a dogmatic assertion: "All birds make nests in spring" e.g., - he can demonstrate cases of birds that do not - counter-model - make nests in spring, the skeptic plays this off against the assertion - model - of the dogmatist! To which Beth does concede, o.c., 85, that this "should only be the introduction to a deeper investigation."

We dwell on this problem because it directly engages the phenomenological basis of logic which, in turn, also begins with the phenomenon but not to dwell on it! The couple "GG / GV" as OPL presupposes the phenomenon of skepticism but exceeds it by the logical step that sees

in the GG a "reason," expressed in prepositional phrases, that makes possible an "inference," expressed in a postpositional phrase. Which does not exclude ambiguities: however, these are not exploited to 'resign' in skepticism.

6.15. This chapter summarizes:

Errors in thinking can occur consciously (sophistry) but also unconsciously (paralogism). The fact that one can delude oneself, and the use of a lie detector, make it clear that affirming what is, is not easy. Moreover, the use of the lie detector demonstrates that consciousness can be the cause of physiological effects and thus is not a companion phenomenon of brain functioning. An errant conscience believes it is right but does not know better, while the bad conscience does not believe it is right. Logical action is therefore minimally and essentially a matter of conscience.

Errors of thought arise, e.g., by reasoning into not the actual GG and GV but into what is similar or related to them.

The petitio pricipii and the circulus vitiosus are both circuitous reasoning. A circular reasoning puts what must be proved already GG first. A circulus vitiosus consists of a double petitio principii. One wants to "prove" two judgments by first putting one as proven before the other. Wanting to prove the evidentiality of the basic axiom of logic "what is (so) is (so)" would likewise amount to circular reasoning.

In his search for certainties of life, for a final reason, man can adopt a critical or dogmatic attitude. The critical man rejects any dogmatic attitude and any metaphysics given the limitedness of human knowledge. The dogmatic man wants life certainties and seeks "truth" in the form of absolute precept as a firm foundation. The final reason is either reasoningly deduced from an endless relapse on presuppositions or from a yet-to-be-proven presupposition or it relies intuitively on contemplation and experience. In the absence of a final reason, one lives with provisional reasons. It seems that reasoning, if contemplated, undermines life in its search for the reasons for that life.

Paradoxes contradict undeniable facts. Zeno of Elea is famous for his the paradoxes. These can be summarized as, "You, who hold an opposing view, neither prove as i, in a decisive way, your premise. Both our starting points are therefore for the time being undecidable".

An argument that exploits the opponent's weakness is called an "argumentum ad hominem." One can try to refute a statement made by someone for reasons that have nothing to do with the statement, because the person is acting in contradiction to his own statement, or because the statement involves a so-called rationalization: someone is deluding himself about something without giving the true reasons. Psychology speaks of "transference," based on perceived or real similarity or coherence. Exposing that similarity or coherence can prevent thinking errors and reveal truth. Thinking errors can.

This can be prevented, among other things, by correctly understanding the connection terms: conjunction, disjunction, exclusion or contravalence. Errors in thinking arise, for example, when symptoms of one and the same system are not understood in their coherence or when similarity is confused with coherence. For example, consciousness can be related to brain function without being similar to it. The abc theory shows us that a person's judgments can be clouded by his own presuppositions, which consciously or unconsciously color the reasoning. A number of reasonings fail in their universal acceptance: one speaks of "argumentum ad ignorantiam." The skeptical method abstains from all that exceeds the phenomenal and plays contradictory opinions against each other, this in order to resign itself to the suspension of judgment. Logic, like the skeptics, also deals with phenomena, but transcends them.