

10.14. Elements of cognitivism II
E.O. COGN.

Contents: see p. 2-4

By way of introduction.

For a quarter of a century, the cognitive sciences have been revolutionizing our view of life. In the USA they are taught in all universities. Thousands of publications distribute them.-- Experience, memory, intelligence, reasoning, consciousness are central to them. It comes down to a kind of comprehensive, logistically and physically explained “psychology”, that is: spiritual science and spiritual philosophy.-- It is therefore one of the tasks of the Hivo to dwell on this more thoroughly.

A dual footing.-- We draw this out.

Philosophy of mind is the philosophical superstructure of a set of subjects.

Artificial intelligence

Cognitive psychology

Linguistics

Neuro- or brain sciences

The substructure is twofold:

Logistics,

Physics,-- and related.

Note.-- It may surprise to see such a detailed discussion of a materialistic form of thought and its elaborations. For, within the Christian Platonism that represents “the great tradition,” this seems something of a contradiction.

But look: what is platonism? A recommendation by *J.B. Store, Quand le corps prend la relève* (When the body takes over), (*Stress, traumatismes*), Paris, O. Jacob, begins with the following:

“The mistake that is currently being made among people is to want to deal separately with the healing of the body and that of the spirit.

So it wrote Platon who lived from - 427 to - 347.

Cartesian dualism is relatively regularly attributed to Platon. This is a “common mistake among men”. Before Platonism, body and mind formed a unity, although the individual nature of both was respected.

This makes it understandable that, especially from a Platonic standpoint, the thorough study of a contemporary materialism that reduces or denies one of the two of body-and-mind, provokes no objection. It is with that in mind that we rehearse the following.

E.O. bookmark COGN. 01.

Terminology note.

Instead of 'logical' - unless we are talking about traditional ('natural') logic - we pretty much always use 'logistic'. The reason: logistics is not logic. No matter what logicians say about it. Logic relies on (whole or partial) identity regarding data ('attributions').

Logic works with symbols,--preferably in propositions. Instead of 'physical' -- unless it is about something other than the physical -- we almost always use 'physical' in analogy with physicalism. In the great tradition, 'physical' is called all that is according to nature (Gr.: fūsis; Lat.: natura) of something (whether physical or not).

'Cognition'. -- (01). - Some descriptions.

Semiotic language analysis.-- (02/12).-- Language object/ language/ meta-language.--

Relations.-- **a.** Syntax (05). **b.** Semantics (06/09). **c.** Pragmatics (10/11).-- Constructionism (12).

Note.-- When both pragmatics (the intended result of a statement) and semantics (the meaning or content intended in that statement) are eliminated, all that remains is syntax (a collection of meaningless and resultless symbols).-- That is the pedestal of logics, which wants to be essence syntax regarding speech.

Logistics.-- (13/17).

Using symbols (symbolic) to calculate (calculus) but such that it is formalized (axiomatic-deductive) structured (13/15). - Classifications (16/17).

Critiques.-- (18/39).

Neo-rhetorical (18). Metaphysical (19).-- Logical (20/39).-- Materialistic cognitivism is a logistic empiricism (positivism). - Natural or traditional (actually ontological) logic is considered by logicians to be a part of folk psychology (except perhaps in predicate logic) and thus to be undeclared (unless pre-scientific). Again: where logic pays attention to (total or partial (analogous)) identities concerning data, there logistics pays attention to symbols and their relations of syntactic nature in preferably propositions expressible.

Hypothetical sentences (22). Identity (23/24). Contradiction freedom (25/26). The radical distinction between word (name) and term (27). Distributive and collective notions as a basis (28). Judgment (similarity or coherence model) (29). Generalization/generalization (30). Quantifiers (31/33). Relationships as partial identities (34/35). Natural reasoning (36/39).

On all these points logic differs from logistics. We believe that there are more than enough reasons to maintain the distinction against all possible 'identifications' (which ignore both logic and logistics in their essence).

E.O. bookmark COGN. 02.

Reductionism(n).-- (40/47).-- As a reminder.-- A materialist asks : “How material (material) is something and how is it material?”. To be consistent he would have to replace the term ‘being’ with ‘matter’: “Does anything matter?” (for : “Is there something?”) and “What does that matter?” (for : “What is that?”).

Phenomenological.-- Is phenomenon, i.e., what shows itself directly, only what shows itself materially.-- Logical.-- Is reason or ground only what is materially reason or ground (material explanation).

Physics (and science based on physics method).- Since for modern physics “nature” is practically (and also theoretically) “matter”, physics is from a materialistic point of view “the science”. It is infrastructure (substructure) of any real i.e. rock-hard science.

These things (essence and also and especially limits of physics) were discussed more fully in metaphysics (second year). Here only what follows.

Edw. Wilson’s reductionism (40). Biogenesis (41). Causality (also of conscience) and laws (42 / 44). Genetics (45 / 47)

Cognitive sciences.-- (48/54).-- Genesis (48). Four subject sciences and a philosophy (49). Metacognitive psychology (50). Model understanding (51). Computational analysis (52). Outline (neuroscience (53).--

Note.-- Note : the model is decisive.

1. Brain Sciences.-- Brain (55/58). Attributable behavior (59). Free will : illusion? (61). Language (62). Eccles’ hypothesis (63).

2.1. Computer.-- (64/73).-- Cybernetics (64/66). Computer (67/68). Algorithmic thinking (69/70). Chemical algorithm (71). Something about connectionism (72). Neuron network (73).

3. Linguistics.-- (74/79).-- Question of formalized language use (74). Chomsky’s linguistics (75/77).-- Inconsistent phenomena of language (78). Text-science (rhetoric) (79).

2.2. Artificial intelligence.-- (80/83). -- History of emergence (80). Machine language (81). Semantic networks (82).-- R. Pentrose on consciousness machine thought (83).

4. Cognitive psychology.-- (84/104).-- Some samples are theorized.-- Causal understanding (84). Cognitive and information processing psychology (85). Traumatic neurosis in Pavlov’s dog (86/87).-- Emergence of cognitive psychology (Jer. Bruner) (88). Scanning of brains (89). Placebo (90/94). Practical knowledge (95). “I lost my keys” (96). Aha experience (97). Cognitive ergonomics (98). Cultural psychology (Bruner) (99/ 101). Maine de Biran (“I also exert myself physically”) (102/104).

E.O. bookmark COGN. 03.

Psychological interlude.-- (105/113).-- J. Dewey on thought process (105). De Groot (objective research / forum) (106/107). De Groot on cognition (108). Psychology of the not -- contemplative consciousness and cognition (109/110). Mind and brain (Würzburger Schule) (111). Mind as I (Würzb. Schule) (112/113).-

Note.-- This is to show briefly that the present materialist cognitivists had predecessors, in the cognitive field.

Philosophy of mind.-- (114/130).-- It would be better to speak of ‘philosophies of mind’! For, if there is anything about which ‘experts’ (the present intelligentsia) are radically divided, then it is about spirit!

Return to “mind to the full” (Pols) (114). “I think but not with my brain” (P.Ricoeur) (115). Conflicting interpretations concerning mind (Clifford Geertz) (116). Metaphysics and “mind” (117).

Conceptual apriorism (Angel) (118). Eliminativism (119). Excursus : “fundamentalist creationism” (120). Dawkins’ concept of ‘science’ (121). ‘Dionusos’ and ‘god’ (cognitivistically interpreted) (122). Introspection (power and limits) (123). The unconscious hinted at by consciousness (124/125). Consciousness (as an unmanageable concept (126). Paranormal phenomena (cognitivist) (127/128). Normal, paranormal, abnormal mind (129).-- Fractalism (130).

Note.-- One sees that there are a sports “packages” at the disposal of those who wish to engage in self-study.-- Therefore, there is no “actual treatise” (in the classical style of the great systematic philosophers). However, the sheets are samples and these are put on sheets. One can, however, supplement them with other information that fits somewhere in one of the packets. One simply slides one’s own sheets between the others.

12.10.1999.

***Deo trino et uno Mariaeque reginae
Universi gratias maximas.***

E.O. COGN. 01.

The concept of cognition.

J.- Fr. Dortier, Les sciences humaines, (The humanities), Auxerre, 1998, 207, says that the “cognitive sciences” make up a “disparate nebula spot.”

Specialized sciences (psychology, theory of artificial intelligence, brain science, linguistics, “philosophy of mind”, not to mention genetics) with their sub-sciences compete with each other to present their “models”.

The axioms also raise fundamental questions: brain scientists and computationalists seem to reduce “mind” and “thinking” to the subhuman level.

Hence the difficulty in defining the concept of cognition in a clear manner.-- Nevertheless, an attempt.

J. van Meel, Cognitive development in: H. Duijker et al, Codex psychologicus, Amsterdam/Brussels, 1981, 315/328, claims that the object, the ‘phenomenon’, called ‘cognition’, amounts to “the higher mental processes” in the human psyche. This boils down to: the way in which human beings (however defined) take in information, process it, code it (record it in symbols), ‘remember it’ (memory that preserves it and makes it available for use again if desired).

If “man” is defined as a type of (self-)active system (which is systems theory definition), within which many relatively independent subsystems (sensory perception, thinking ability, language ability, memory, will etc.) are situated, then man immediately exhibits a multitude of objects - phenomena, better: partial phenomena - for knowledgeable scientists. Add to this social cognition: man develops information processing jointly, with fellow human beings.

H. Benesch, Atlas de la psychologie, Libr. Gén. Franc., 1995, defines pretty much in the same sense (pointing out that unconscious and subconscious knowing processes, metacognition and psychologically disturbed intelligence also belong to the phenomenon of ‘cognition’),-- distinguishes introspective methods (from the Würzburgers onwards) and extrospecific methods.

The latter include some’ seven sub-methods: brain waves, skin potential, muscle responses (micro vibrations), heart responses (blood pressure), respiratory responses (frequency/volume), ‘lie detector’ (finger skin responses), electroencephalogram, can reveal aspects of ‘cognition’.

E.O. COGN. 02.

Semiotic language analysis. (02/12)

Bibl. sample: I.M. Bochenski, *Philosophical methods in modern science*, Utr./Antw., 1961, 45/89 (*The semiotic methods*).

Already Aristotle, following in the footsteps of the protosophists and Platon, incorporated semiotics into his theory of judgment. The background is: someone says something, something from (= judgment) to someone.-- Let us take: "It is sunny today". As a sign, this statement exhibits a threefold aspect.

1. Syntax.-- The phonemes "it, is, today and sunny" stand in a well-defined relation to each other in the Dutch code (language system). Syntax studies these interrelationships.

Note -- The medical semiology (symptomatology) will, e.g., extract from the components "very difficult concentration, labored speech, poor sleep, nerve pains" as a whole (system) a syndrome of symptoms (perhaps someone who works in toxic substances). The syntax sees the syndrome.

2. Semantics.-- The phonemes "it, is, today, sunny" mean something. In other words: they refer to a domain of reality. In this case: the ascertainable fact that the present is indeed sunny. This decides the truth value of the sentence.

3. Pragmatics.-- The sentence is part of a communication between e.g. a man who says, "It's sunny today. Shouldn't we be out and about". The language use or language play is "inciting", "proposing", i.e. influencing his wife. The language use is then clearly performative or signifying (rapport-building).

The (sufficient) reason or ground of a sentence (judgment).-- The term "reason" or "ground" comes from justification theory (a part of logic).-- The reason of a sentence is semiotically threefold.

1. syntactic: the sentence is what it should be, thanks to the correct relations of the phonemes among themselves;

2. semantic: the sentence is what it should be thanks to the truth (agreement with the referent) contained in it:

3. pragmatic (significal): the sentence is law it must be, thanks to the truth-value in the service of a proposition (which is assumed to make sense in the situation in which the sentence is spoken).-

Remember that a text is a coherence of judgments, and as such (as needing threefold reason) it can be so dissected.

E.O. COGN. 03.

The language object and language and meta-language.

Bibl. sample: I. Bochenski, *Philosophical methods in modern science*, Utr./ Antw., 1961, 72v. (Semantic stages).

We repeat : semiotics studies **a.** syntactically (concatenation), **b.** semantically (reference), **c.** pragmatically (result-oriented) all that is sign (symbol, signal).

1. Presemantic.

The object or given.-- An unnoticed girl.-- That is indeed the present but unnoticed given: to which one does not pay attention, about which one does not speak (neither with the inner word nor in language). So language is not there yet because there is not even a phenomenon, i.e. something that shows itself. This is called the semantic zero.

2.1. First semantic stage: object language.

One becomes aware of the girl and says : “That girl is there”. -- Because there is phenomenon, there is reason for language, for articulation. And a language that literally sticks to the object: the given enters the sign system.

2.2. Second semantic stage: meta-language.

It happens that we pay attention to our speaking: speaking itself becomes phenomenon (of awareness). Words are invoked. In direct speech (“I say just now: ‘That girl is there’.”) or indirect speech (“I say just now that that girl is there”) I speak a language about language, a meta-language. Because attention is not paid (unless indirectly) to the object (“That girl over there”) but to what is said about it.

Lie language.

When a liar speaks and does utter a lie, then, given enough inner life, he hears the voice of his conscience: “What thou hast just said is false.” Or he himself expresses about his speaking thus: “What I say now is false.” The lying one is pragmatic through and through: semantics is subject to pragmatics. But his meta-language restores the right of semantics (the truth value).

As long as an outsider cannot test “what he says,” such language is undecidable as to truth value. Semantically. undecidable. For it can involve both truth and falsehood.

Note -- Scientific language is first of all object language but theory about scientific language is meta-language.-- Thus linguistics is meta-language as language about language. For example, there is logic and metalogy. Our consciousness exhibits a first and a second ‘intentio’ (paying attention).

E.O. COGN. 04.

Relations as the basis of syntax.

Bibl. sample: J. Royce, *Principles of Logic*, New York, 1961 (1912-1) 937/ 47 (*Relations*).

Royce (1855/1916) was an idealist, but under the influence of Peirce's pragmatism.-- Logic, understand: logistics, for him is applied harmology (doctrine of order(s)). In it, of course, seeing relations plays the leading role.

1. *Basic understanding.*

If there is one concept that is of the utmost importance in the whole theory of order(s), it is expressed in the term "relation": "Without this concept (understanding) we cannot advance in this matter" (o.c., 38).

2. *Definition.*

However, if it comes to defining "relation", there is only one way out: using other terms which in turn presuppose that one already knows what "relation" is. Apparently Royce understands that one can say: "A relation is something like a given and at the same time another given and what is situated between the two (takes place, realizes, etc.)". But then one has already presupposed what one wants to define, namely the abstract relation itself.

Method of applicative models.

However abstract "given 1" and "given 2" may be, they represent concrete data. In the words of I.Kant, "Without concrete examples (applications), abstract definitions (rules) are empty. Without abstract definition, concrete examples are blind".

Royce as a logician, favors abstract definition. But look: if we say "someone's father" is one applicative model (application) of the concept of "relation" (regulatory model, i.e. rule), then for the beginner in logic the "dead" concept of "relation" begins to "live".

Yet Royce's method which states that relation is a something that obeys the (abstract) formula ('function') 'xRy' (understand: x is in relation to y), is theoretically the best.

If 'syntax' is the study of relations, then we now have the pedestal, the concept of 'relation', before our eyes. This insight, however abstract, will allow us to see endless 'applicative' models (examples, applications) of the one concept of 'relation'.

E.O. COGN. 05.

Something about syntax.

Bibl. sample: *M. Sergeant, Language and Logic*, Baarn, 1274, 9v.-- Both the truth-value and the use-value of a language, better : a sign system S, are “put in brackets,” so that we end up in full abstraction. Empty shells - symbols - and combinations of them are the object.

***Appl. model.-- I. Bochenski, Philosophical methods in modern science*, Utr. / Antw., 1961, 49, says: one can put purely thought-out rules first and invent, e.g., a syntax, a system of symbols and combinations S, in which only as symbols P and x are accepted, - together with as a syntactic rule “P always stands for x”. What P and x might mean semantically or pragmatically is totally neglected.**

Syntax.-- This strikes two aspects.

1. *Terms.--* One says, e.g., “A term - symbol, set of symbols - is determinable by means of - note the relationship - some other terms; or, “A term is reducible to some other terms); even though it is not determinable by means of those other terms.”

2. *Judgments.--* One says e.g., “This judgment is incompatible with some others”. Or: “This judgment is derivable from this or that judgment”. Still: “This judgment is independent of that other”.

Note.-- In formal logic (Platon, Aristotle) - and also in speculative logic (Hegelian) - we will encounter such ways of saying things regularly but filled up (the empty shells of pure syntax are filled up) with signifying terms.

In doing so, Sergeant relies on *Rud. Carnap* (1891/1970; *Der logische Aufbau der Welt* (The logical structure of the world), (1928)), who wanted to make thinking metaphysics-free.

1. *Descriptive syntax.*

Copies of language are examined for the relations between the constituents and the rules governing them.

2. *Pure, versta: axiomatic, syntax.*

Rules are set up as in Bochenski’s model above, concerning terms and well-formed expressions in a system S. It is den about formation and combination, about e.g. the provability of a theorem or its derivability in S.

This “ribcage” of language uses is brought up in a padded form in formal and certainly in speculative logic.

E.O. COGN. 06.

Logical semantics (understood psychologically).

Bibl. sample: C. Sanders et al, *The cognitive revolution in psychology*, Kampen, 1989, 139vv.

The framework is the psychology of understanding but in terms of natural language use (and natural thinking). The intelligibility of language use to the hearer is the stake.

1. Truth.-- Alfr. Tarski, *Logic, Semantic, Mathematics*, Oxford, 1956, defines 'truth' as follows.-- "My sister is there" is a sentence. Symbolized in p.-- Well "If and only if p, then p is true".

Application: only if my sister, is there now (actual event), is that sentence true.

Note -- An application of the identity axiom.

2. Meaning.-- In the wake of *Rud. Carnap, Introduction to Semantics and Formalization of Logic*, Cambridge (Mass.), 1968, one argues, "If the conditions (situation, 'context') under which a sentence is true are known (by speaking and listening), then what the sentence means (event, fact as currently true) is known."

In other words, if the person who says "My sister is there" is expressing a fact (event) that is true (currently true: at the time of utterance), then the sentence is logically meaningful.

References.-- Bibl. sample: Gotl. Frege, *Ueber Sinn und Bedeutung*, (About sense and meaning), in: *Zeitschr. für Philosophie und philosophische Kritik* 100: 25/50.

The 'Sinn' of a sign expresses the conceptual content ('Vorstellung') associated with it; The 'Bedeutung' (reference) is the reality signified by the sign.

'Morning star' and 'evening star' differ regarding 'Sinn' but refer to a same reality, the planet Venus.

1. Intensional meaning.

"It's nice weather"-- The meaning of that sentence is clarified by listing the elements that make (constitute) nice weather: as good as windless, absence of rain, summer atmosphere and so on. When the hearer understands those elements, he immediately understands all possible "nice weather", o.k.a. the context that the elements of nice weather make up.

2. Extensional Meaning. (size)

It is a current fact that the weather is clean. We then say to a hearer: "It is nice weather". From this one instance of beautiful weather we make clear to the hearer what we (and immediately he/she) mean by this one beautiful weather. That too is meaning (communicating and understanding).

E.O. COGN. 07.

The ontology of logical empiricism.

The Wiener Kreis in particular (founded by M. Schlick in 1923), as a logical empiricism, put forward a twofold axiom: “If and only if it springs from sensory experience (perception, sensation) and can be expressed logically (i.e. logistically) in sensible statements, knowledge is really knowledge.”

Note.-- As M.Apel, *Philosophisches Wörterbuch*, Berlin,1946, 65, says, empiricism is an ancient tradition that begins with the Stoics and the Epicureans, among others, but has a strong modern presence in the Anglo-Saxon world (Fr. Bacon, especially J. Locke).

1. *Linguistic empiricism: well-formed propositions.*

Every language exhibits an agreement-based grammar (syntax): “Iris is a pretty girl” is well-formed but “Iris squares along” is not.

2. *Meaningful well-formed propositions.*

This refers to the phenomenology of the empiricists.-- Is real “phenomenon,” i.e., showing itself directly, all that can be experienced by the senses. To this the empiricist tests all statements.

If and only if well-formed judgments are sensory testable, (‘verifiable’), do they make sense (are they meaningful or sensible). - “God exists” or “Egyptians worshipped the holy cat in ancient times” are not because ‘God’ or ‘holy’ are sensory unverifiable.

It is so clear that empiricism herewith does ontology (metaphysics) in an aggressive way. Or rather : very naive, because with its criterion, (means of knowing) it knows beforehand that, even if there were an experience of God or an experience of the sacred -this is what religions claim-, it would be tested exclusively by means of sensory experience of which one nowhere proves that it is the only access to total reality, being(s).

3. *True sensible propositions.*

Truth is reduced by the empiricists to sensory truth such that statements like “God exists” or “Holy cat” do not even qualify for truth or falsity. Hence, that physics is basic science.

Just that double axiom - empiricism and logics - the logical empiricists even sought to “ground” all the subject sciences as the unifying foundation of them. To the exclusion, of course, of all metaphysics. Thus the professional sciences were ‘kidnapped’ from the grip of metaphysics.

E.O. COGN. 08.

Language game theory (L. Wittgenstein), viewed semantically.

Ludwig Wittgenstein (1889/1951), known for his *Tractatus logico-philosophicus* (1921), written in the wake of B. Russell's courses he took, among others, turned radically against his first book with his *Philosophische Untersuchungen* (Philosophical investigations), (1953): russellian atomism concerning world and language he replaces with a theory of language games.

Appl. model.-- "I have seen the sun rise" is said by the mean mind. "The sun does not rise (but the earth revolves around its axis)," is the language of the physicist. "Today the sun has risen 47 times says le *Petit Prince* (by A.de Saint-Exupery (1943)), the language of a fairy tale.

In other words: only if one understands the three statements about the sunrise from the axioms, inherent in the three standpoints (perspectives), which decide about the 'meaning' (meaning), one can pronounce on the reference, i.e. the reference to reality, and thus on its truth value (true / false).

Note.-- In mid-century Scholastic hermeneutics (interpretive science), one says that one material object (sunrise) is amenable to more than one formal object.

Life forms.

Social life - Wittgenstein is fundamentally very sociologicistic - exhibits a multiplicity of forms of life: producing goods (economy), intelligentsia (sciences, arts) religions, political activities. Each of these domains exhibits its own linguistic specificity, i.e. a language game that actually constitutes its own sector within the general language.

Truth as stakes a small sector. (// Platon's "little man")

Wittgenstein believes that very little in life is about truth:

- a. there is arithmetic, vocational speaking;
- b. but there is commanding, praying, singing, lying that brackets the "objective truth" for something else.

Philosophy, especially ontology, he situates in everyday speech as a language game. Starting from his axiom that traditional metaphysics cannot withstand physical-logical scrutiny, he claims that its language play is substandard.

Note.-- Can metaphysics not decisively prove its propositions, neither is Wittgenstein able to prove once and for all with his theory of language games that it is nonsense and thus not amenable to truth assignment.

E.O. COGN. 09.

Something about semantics.

Bibl. sample : *M. Sergeant, Language and logic*, Baarn, 1974, 8v..

Semantics studies the relations between language signs (as content) - they say something - and the objects and events (dates) to which they refer - they say something about something. They are signs “for something,” whereby means “in place of.” -- Subsisting on Rud. Carnap, *Introduction to Semantics*, Harvard Univ. Press, 1942-1 the proposer says what follows,

a. *Descriptive semantics.*

She takes one or more specimens of language whose truth-value, inherent in terms and judgments, she examines on its rules. “Under what conditions, e.g., is a sentence true?” reads the question. The relations between the parts of speech (parts of the sentence) and the realities of which the sentence speaks are dissected because these realities determine the truth-value of the sentence.

b. *Pure semantics.*

Understand : formalized (axiomatic-deductive) theory of meaning. An artificial system of symbols is introduced that is as abstract as possible (as syntactically calculating as possible). This is calculated in three ways.

b.1. Rules of formation determine what is acceptable as “primitive” (initial, merely axiomatically presupposed) symbols and what is acceptable as well-formed basic judgments.

b.2. Reference rules determine what can pass as directed to reality (objects, events).-
- For example: x1 designates Anneke” or ‘a’ designates the property “being intelligent”.

b.3. Truth rules decide what can be judged as ‘true’/’false’.

Note.-- *P. Seuren, Discourse Semantics*, Oxford, 1985, talks about the given utterance A dissected for its meaning (semantically) within the utterance system D (discourse). But Seuren argues that the meaning of language utterances is not reducible to mere truth values.

Its study should either be supplemented or reduced to a broader view (including grammar).

Indeed: take a humorously intended sentence like “It’s me beautiful weather today!”. A purely syntactic-formalized meta-language about it will have trouble “building” humor into “the system” of relations of symbols.

E.O. COGN. 10.

Language use (something about pragmatics).

Bibl. sample: *M. Sergeant, Language and Logic*, Baarn, 1974, As Ch. Lahr says: people in situations employ language to express contents of consciousness. (Depending on the situations we can distinguish with L. Wittgenstein (1869/1951) ‘language plays’, language uses. The most striking we bring up briefly. As pragmatics (signification).

1. *Auto-implication.*

The one who speaks or writes is always involved in it anyway. In English: self-involvement. Not only, as is sometimes claimed, in metaphysical (meaning: life and world), particularly religious speaking and writing, but in all linguistic expressions. One always puts something of oneself in language. Even the liar who seeks to hide his inner self betrays himself.

2.1. *Establishing.*

(Also : positive or definite; or didactic;-- English: constative). Assertions as far as given are expressed : “The sum of the angles of a triangle is equal to...”. Or: “ $2 \times 2 = 4$ ”. Or: “It is raining”: Descriptive and narrative or reporting texts are constative.

Note.-- Aristotle called such a position “apofansis” (from there : apophantic language). A mere word it is not.

2.2. *Argumentative.*

(Also discursive, argumentative). This language seeks to justify itself by articulating the (sufficient) reason or ground. Central to this is reasoning (“if, then”). In a word: language as a thinking tool.

3.1. *Expressive.*

This use of language wants to express one’s own permeations: “I am so happy!”. Belletry (fine literature), particularly poetic language, is expressive. “Dit voetjen - en dat voetjen - gaan te gare de kalvekes wachten.- De kalvekes lopen in ‘t koren”. (This little foot - and that little foot - go together, the little calves wait.- The little calves walk in the corn".), Thus G. Gezelle.

Note: The poet Guido Gezelle wrote in an older Flemish dialect and is difficult to translate. As is often the case, such a translation loses much of its beauty.

3.2. *Performative.*

This language, rapport-building, wants to influence fellow human situations. “I order you to leave immediately!”. “Holy Trinity, we beg you to save us from this painful situation”.

Note.-- Aristotle calls this mere ‘fasis’, signification.

We will note that logically speaking, paying attention to language use is essential because reasoning reflects language situations or “language games” as life forms (Wittgenstein).

E.O. COGN. 11.

Logistics and magic and taboo's.

We begin with an introduction.-

H. Hempel, Variabilität und Disziplinierung des Denkens, (Variability and discipline of thought.), Munich/Basel, 1967, 104/1307- Natural logic: "Something is or is not". Variological (emphasizing becoming different) thinking: "Something is and it is not" and "Something is so and so is not". Magical thinking: "Something is more than itself". By 'itself' the proposer means "that something insofar as it shows itself to Western man".

This is how Hempel characterizes the three "variants" of thinking.-- He substantiates this with typically rationalistic considerations (childhood mentality, primitive mentality, Renaissance magic, present-day magic) and the "more" he seeks in, among other things, "invisible forces" (p.c., 125). The ethnocentricity of Western interpretations of e.g. magic is nowhere apparent to Hempel.

Avoids.

Gerh. Frey, Logische Modelle der Tabu-Sprachen, (Logical models of taboo languages,), in: *A. Menne/ G. Frey, Hrsg., Logik und Sprache*, Bern/ Munich, 143/158, interprets -- or tries to interpret -- the ubiquitous taboos (avoidances) from the logistical and thus in (language) analytical tradition linguistically.-- "In what typical language forms do taboos express themselves?" Languages restrict free speech to what is not "avoidable".

a. Earlier forms.

Herodotos reports that Ionian women do not pronounce the name of her husbands. In some languages, one does not pronounce the name of a dangerous animal.-- Usually, unless there is a wear on the original usage, the reason is a sacred one (all that is "sacred" can be dangerous).

b. Current forms.

Wilh. Wundt (1833/1920) extends the ancient concept to the field of sociology : also our modern society knows things "about which one does not speak". S. Freud (1856/1939) extends the concept of "Tabu" to (depth) psychology : people e.g. with a compulsion can "not get said" what bothers them (repression).

In Lukasiewicz's wake, among others, Frey attempts to determine in logistic symbols and their connections which propositions pronounce taboos. He thus arrives at "the rejecting negation" which 'rejects' certain propositions.

A language is thus divided into non-rejectable and rejectable sentences. Frey then specifies this in - for the uninitiated - extremely complicated logistical formulas. Of which one may wonder whether they provide so much light on the matter itself, namely the avoidance and the one to be avoided.

E.O. COGN. 12.

Constructionism (constructivism).

Bibl. sample: M. Everard, *Soul and Senses (On love and lust between women in the second half of the XVIII- th. century)*, Groningen, 1994.

The book, apart from being about lesbianism, is a plea for constructionism. “The ‘essentialism/ constructivism’ debate has long been decided in favor of the latter. Now what is ‘constructionism’?”

Constructionism.

a. This is first of all a linguisticism: the name (the word) creates the phenomenon. In other words: there is no lesbianism as long as the word, the name, is not there. *Lingua*, the language, founds the reality which in itself is nameless. Linguisticism.

b. Communitarianism: the name is created by a community with its culture or, as it is still said, by a form of life.

Differenti(al)isme.

Hand in hand with construction goes

a. the absolute emphasis on all that is difference (and gap) : the names that the groups or forms of life give to things that are in themselves inessential are “babel confusion”. They differ radically. This both synchronically (= from culture to culture; multicultural) and diachronically (= from cultural period to cultural period, historicity).

b. These differences (and gaps) derive both from the differences and gaps between the naming groups (and even individuals) and from the “concrete” things which are given these names and which are so different from one another and “separate” from one another that generic names are fictions. In other words, there are no universal concepts. Only private and singular ones.

Nominalism.

The summary name for differential constructivism is ‘nominalism’. ‘Nomen’, name in Latin.

A. Foucault (1926/1984).

Everard is a follower of Foucault, who argues that the term “homosexual” is purely constructive. So that before the end of the 19th century, when the term became commonplace, there was no question of homosexuality. Language controls what is attributed to realities!

This is also Everard’s opinion regarding the term “female homosexuality”: the phenomenon it refers to did not exist in the 18th century because the word for it did not exist.

Note.-- B.U. Hergemöller, *homosexuelles alltagsleben im mittelalter*, (homosexual everyday life in the middle ages), in: *Zeitschrift für Sexualforschung* 5 (1992), 124, argues that the term “homosexual” as a general term is indeed usable for phenomena prior to the XIXth century.

E.O. COGN. 13.

Notes on formalized logic. (13/17)

I.M. Bochenski, *History of contemporary European philosophy*, Desclée de Brouwer, 1952, 270, writes:

“In fact, the founders of symbolic logic are not only not positivists but, on the contrary, platonists (G. Frege (1848/1925), A.N. Whitehead (1861/1947), B. Russell (1872/1970; at least when he wrote *Principia mathematica* (1910/1913) with Whitehead), J. Lukasiewicz (1878/1955), Abraham Fränkel (1891/ 1965), H. Scholz (1884/1955; founder as theologian of a Center for logical studies) and others). Today it has followers in all schools”. This should give pause for thought to those who claim that Platonism is no longer viable!

Three waves.

I.M. Bochenski (1902/1995), *Formale Logik* (1962-2)) claimed that the history of “logic” (which he understood first of all as formalized logic) counts three “waves

- 1.-- Ancient logic (fourth/third century BC);
- 2.-- Middle medieval logic (twelfth / thirteenth century);
- 3.-- The ‘modern’ formalized logic (since + 1850).

In between these periods - Bochenski argues - there are long periods of “neglect,” indeed of great ignorance of “logic. Thus, he says of the modern period, “The modern era since Descartes is so terribly ignorant that any modern philosopher - Leibniz (1646/1716) (who knew scholasticism well) excepted - would have failed in his first-year ‘logic’ exam.”

Note.-- This typically formalistic use of language makes the self-confidence of some logicians seem momentary. They speak as if many a thinker, who indeed knows no formalized logic, were not capable of rigorous action precisely because of it. Which remains to be proven.

D. Nauta, *Logic and Model*, Bussum, 1970, 22v., gives an overview of logics which he lets begin with G. Boole, *The mathematical Analysis of Logic* (Boole algebra), G. Frege (Begriffsschrift (1879)) and G. Peano (1895/1908: *Formulaire de mathématiques*, (a formalization of all mathematics).

The metalogy lets Nauta deploy with L. Löwenheim (1915: *Ueber Möglichkeiten im Relativkalkül*), (About Possibilities in Relative Calculus), -- the cognitivist applications (computer science, neurology, linguistics) he lets start around 1950.

E.O. COGN. 14.

Symbolic logic.

The logic applied -- among others in most ordinator -- relies on symbols that represent all the data, data, such as images, numbers, words together with the reasoning rules.-- $x, y, \neg, E, >, =, \rightarrow$ etc.. (J-Fr. Dortier, *Les sciences humaines*, (Humanities), Auxerre, 1998, 227).

Platonism.-- Briefly : in the Platonic tradition since antiquity, a symbol is called “lemma” (also: prolèpsis), literally: antecedent. And the employment of symbols is “the lemmatic-analytic method”. We explain a little on the basis of *O. Willmann, Geschichte des Idealismus, III (Der Idealismus der Neuzeit)*, (History of Idealism, III (Idealism in the Modern Era)), Braunschweig, 1907-2 48ff..

a. Platon.-- Diogenes Laërtios III: 24 says: “Platon was the first to give the method of investigation by ‘analysis’ (note: reductive reasoning) to Leodamas the Thasian.”

The ‘strategy’ consisted of introducing the Asked (requested), as if it were already given, (and thus known), and examining it on its terms (relations). This second part is called ‘analysis’, analysis.

The characteristic is the prefix of the solution (as if the Asked was already Given). So the full name should be: “lemmatic-analytic method”. For the analysis starts only after the lemma,--as the object of the analysis: namely, the analysis of the complex of relations in which it is contained.

b. Francois Viète (Vieta (1540/1603)).

Viète knew the lemmatic-analytic method. He applied it and created letter arithmetic.

b.1. Logistica numerosa.-- The numerical calculus of the middle ages knew the unknown (GV) and introduced it as ‘rest (the matter under consideration and designated it symbolically by ‘r’ -- OPM.-- Later Descartes will make it ‘x’.

b.2. Logistica speciosa.-- Viète (*In analyticam artem isagoge*) introduced the following scheme:

idea (species)	$2 + 3$	$a + b$
universal	private	universal
non-operative	operative	operative

In other words: by starting from the platonic idea (Lat.: species) and ‘translating’ (making it editable) the equations with unknowns (as lemmas) into letters (symbols), Viète opened the way to algebraic analysis, analytic geometry and differential calculus and so on.

E.O. COGN. 15.

Formalized logic.

One of the constituents of cognitivism is called “formal logic”. ‘Formal’ in cognitivist parlance means ‘formalized’, i.e. elaborated on the model of e.g. arithmetic which we all can do.

I.M. Bochenski, himself a “formal logician,” says; “Formalism consists essentially in an extension of a method already known for centuries, namely arithmetic.” (*I.M. Bochenski, Philosophical methods in modern science, Utr./ Antw., 1961, 5.*)

As an aside, not surprisingly, the computer that is formalized “thinking” is also called a “calculator.

Linguistic.

Formalism strips all language - computational language e.g. - of all semantic content in order to work with empty syntactic ‘shells’ (symbols), i.e. to ‘calculate’. What a or b or x or y can mean, semantically speaking, is ‘eingeklammert’ (put in brackets). One works, as Bochenski says, with “blackened patches of paper”: he means the “hooks” (connecting signs like e.g. “---> “ (if, then)) and the “eyes” (connected signs or symbols like e.g. “a”). However, this blackened paper is ‘edited’ logically, i.e. according to syntactic rules to be drawn up.

Final sum.-- To use language as syntactically as possible.

Axiomatic-deductive.

Such a language is also provided with basic signs and basic connections : the axioms. These axioms govern the further elaboration of the whole “logistic system”. One point: that system must be free from ‘paradoxes’ (= contradictions) to its extreme consequences.

Note -- We refer to e.g.

-- *E. Agazzi, Modern Logic (A Survey)*, Dordrecht, 1981 (historical, philosophical, mathematical aspects of modern logics and its applications; considered a standard work).

-- *W. de Pater/ R. Vergauwen, Logic (Formal and Informal)*, Leuven/ Assen, 1992 (three sections: traditional logic; symbolic logic (in passing: another name for ‘formalized’ logic); informal logic).

Note -- The Association for Symbolic Logic is fighting for a realignment in the pedagogical field: instead of “descending” from formalized logic to ordinary logic, this association proposes starting with informal (ordinary) logic and only then moving on to formalized logic.

E.O. COGN. 16.

Logistics.

Bibl. sample: *Phil. Thiry, Notions de logique*, (Logic notions), Bruxelles, 1998-3.-- 'Logic' is a logic of objects and events insofar as they are expressed in valid (or invalid) reasonings (inférences), which are preferably expressed mathematically-symbolically, i.e. formalized.-- Classical logic (binary: true/false) comprises two parts.

1. Proposition logic.

Logic of unanalyzed sentences. Interpropositional logic.-- The smallest constituent is the sentence that expresses an event or a 'fact'. Thus: "The flower is red", "Angela goes up the mountain". -- From such (minimal, called 'atomic') sentences, 'molecular' propositions are combined.

Note.-- She is the re-establishment of the logic of compound judgments of ancient stoics (nominalist).

2. Predicate logic.

Logic of analyzed sentences. Intrapropositional logic.-- The smallest constituent is one term within the proposition: 'bean', 'bag'. It is about objects.

As an aside, the proposition expresses a relation between objects or collections of objects. -- The object is defined by situating it within a class of objects. Thus: 'beans'; 'bags'. These classes the logic then situates between classes.-- Result: classification logic.

2.1. Old predicate logic.

From Aristotle over S. Thomas Aquinas to Leibniz.-- This is called "natural logic" because it is based on the vernacular. Was elaborated in a remarkable way by Aristotle in his *Organon*.

2.2. Modern predicate logic

quant(tifica)tower logic.-- It reestablishes the Aristotelian predicate logic, elaborates it further by expressing it symbolically-mathematically. Which increases the accuracy of it.

3. Non-classical logics.

These are not binary (true or false). -- So: the modal logic (necessary/ not - necessary/ necessarily not). So: the multivalent logic (besides true/false also 'neutral; as in the sentence "Anneke is going on a skiing vacation tomorrow" (one does not yet know if it will ever be 'true')). So: dropped logics (Heyting e.g.) So: the chronological logics ("What once was, now is, ever will be").

Thus: the normative logics (mandatory/permitted/prohibited).

E.O. COGN. 17.

Traditional, symbolic and informal logics' s .

Let us consider for a moment the classification of W. de Pater/ R. Vergauwen, *Logic (Formal and Informal)*, Leuven/ Assen, 1992.

1.-- Traditional logic.

This section includes: validity problems, interpretation problems (“reasonable” interpretations), definition of fallacies, and syllogistics.

Central to this is the abstraction process regarding human reasoning: logic departs from the phenomenon, the fact that human beings (= all human beings, insofar as they are gifted with reason in their realization) reason in order to extract ‘abstract’ - one now likes to say ‘formal’ - rules from it.

Note.-- Hegel and his followers placed emphasis on that abstraction process in connection with the concern to stick to the concrete-singular or concrete-particular which they defined as the object of reasoning,-- seen from “the general.”

2.-- Symbolic logic.

The value of formalizing comes up.

Note.-- What in Hegelian perspective is “implemented abstraction”,-- even further removed from the concrete phenomenon seen from the general.

Proposition logic, predicate logic and class logic are set forth. In which, of course, the classical syllogism returns in a formalized way.

Note.-- I.M. Bochenski, *History of Contemporary European Philosophy*, DDB, 1952, divides somewhat differently: **a.** fundamental concepts; **b.1.** logic of propositions (theorems), **b.2.** logic of predicates and of groups; **b.3.** logic of relations.

Note.-- Apparently the classification depends on the accents one places in front.

3.-- Informal logic.

The *Topika*, by Aristotle, is taken as a guide here. ‘Informal’ logic is referred to as “philosophy of ordinary language” and as “argumentation theory. This section ends with the theory of definitions.

Characteristic here is not, “From premises which (Given.) deduce which conclusions (Asked),” but rather, “Given conclusions (Given) presuppose which premises (Asked). One sees the shift, in Platon’s wake; what Platon called “sunthesis” (deduction) to what he called “analysis” (reduction).

As an aside, this proves that Aristotle is wrongly identified with mere deductive theory. Which, however, happens several times. The impression is that theorists had pedagogical concerns.

E.O. COGN. 18.

Neo-rhetorical critique of logistics. (18/39)

Bibl. sample: Ch. Perelman, *Rhetoric and argumentation*, Baarn, 1979 (or.: *L'empire rhétorique (Rhétorique et argumentation)*, Paris, 1977).

Ch. Perelman (1912/1964), once a professor at ULB, is the founder of neo-rhetoric (new argumentative theory).

Logistic positivism.

In the wake of G. Frege above all, “logical positivism” upholds two axioms.

a. Rational is only the language and, among other things, the reasoning peculiar to mathematical physics and related fields: only “facts” (material facts) and axiomatic -deductive strictures “count” as valuable.

b. Irrational, then, are all value judgments - peculiar to action people, philosophers, legal scholars and the like - because they are not “material facts.”

Perelman.

“La nouvelle rhétorique” argues that even logistic mathematical thinking puts natural thinking first.

1. Natural thinking and arguing - persuading fellow men (and oneself) - purging it of its ambiguous terms and the accompanying ambiguity (poly-interpretability) is pure pretension on the part of logicians. After all, they project their unambiguities into natural language, as it is common in e.g. our daily newspapers or even in erudite books. For logicians, poly-ambiguity is unforgivable weakness”.

2. The logicians are blind to the unmeasured and unmeasurable utility of all kinds of natural language use, For a term - even a many-sided one - is, once within natural language use, always situated. The circumstances in which it is argued are the context which usually provides sufficient information to exclude all unwarranted interpretations.

When one speaks daily, the explicit citation of all axioms, of all informations is unnecessary because these are evident from the whole in which one communicates. In the first place, this is the prevailing culture in which everyone is brought up and lives. Whoever knows this, understands correctly what is said, even if it is logistically ambiguous.

Logistics is precisely contextless speech: the symbols and their connections must “apply” outside any context.

Behold the main ideas of neo-rhetoric: they literally put logistics in its place: out of any context!

E.O. COGN. 19.

Metaphysical critique of logistic thinking.

Bibl. sample: L. Fleischhacker, *Beyond Structure (The Power and the Limitations of Mathematical Thought in Common Sense, Science and Philosophy)*, Frankf.a.M., 1995.

O. Heldring, in a review, situates the work he has praised.-- Current philosophizing seems to be dominated by the struggle over the value of scientific, particularly natural scientific, thinking.

1. A broad movement elevated, in our XXth century, natural science to the guiding principle of thinking without question. One thinks of positivism, naturalism and evolutionism.

This identifies “knowing” with “knowing mathematical structures” of reality. This manifests itself especially in logistics and engineering.

2. A countercurrent - we think of postmodernism (Derrida, Lyotard et al.) - does not believe in the absolute truth of mathematical-naturalistic thinking.

For each “structure” is replaceable by a new one from ever new points of view so that each mathematical-naturalistic thought product is itself subject to revision,

Note.-- Contrary to what G.Frege once dreamed of -- a single there absolutely true logistics -- today’s logistics is a bunch of different, yes, contradictory logistics.

Cfr O. Heldring in *Tijdschrift v. philos.* 58 (1996): 2 (June), 397/400.

For a Derrida, even natural science and mathematical thinking - along with our entire Western tradition - is a long rhetoric, i.e., the defense of debatable propositions.

Bibl. sample: Theo de Boer et al, *Modern French philosophers*, Kampen/ Kapellen, 1993. The work shows us deconstructive interpreters at work (Foucault, Ricoeur, Irigaray, Baudrillard, Levinas, Derrida, Lyotard, Kristeva).

Fleischhacker situates mathematical thinking between our experiential world and metaphysics. He himself is mathematically trained and investigates the foundations of mathematics from a metaphysics that places intellectual intelligibility and unity-in-the-multitude, inherent to reality, at the center. In this way he “literally puts mathematical thinking in its place”.

E.O. COGN. 20.

The difference between logic and logistics. (20/39)

Bibl. sample: G. Jacoby, *Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, (Logisticians' claims on logic and its historiography), Stuttgart, 1962.

O.c., 5, the author summarizes what *Bruno von Freytag* (known for his *Logik (Ihr System und ihr Verhältnis zur Logistik)*, (Logic (your system and its relationship to logistics), Stuttgart, 1955-1, 1961-3) demonstrated at the philosophers' congress in Bremen (1950). In the midst of a spirited discussion with logisticians gathered there internationally, von Freytag thoroughly clarified the distinction between logic and logistics.

Logic does not pretend to be logistics while logistics mostly pretends to be logic.

Systematics.

1. Logistics is mathematics. Logic is philosophy. Both are different sciences under consideration of foundations (axiomatics), problem sets, purpose, construction, and method: logistics is professional science; logic is the foundation of legitimate reasoning.

2. One subject is never definable by another: so far (1962) all attempts to define logistics as logic have failed.

3. Object of logistics are mathematical symbols and their connections both logical and non-logical.

The object of logic is something entirely different: the philosophical understanding of what is called "logical. Whereas in logic symbols only constitute abbreviated terms.

4. Only the one logic exists. However, there are logistic calculi (computational techniques) with as objects e.g. propositions (sentences, judgments), predicates (sayings), relations, modalities (necessary/not necessary/not necessary).

Logically, such calculi are based on partly second-rate presuppositions partly false presuppositions.

Historiography.

5. The history of logic is different from that of logistics.

6. The logistic historiography of logic pretends that part of ancient logic (i.e., platonic-aristotelian) and of mid-century logic was actually already logistic.

7. The belief that logistics was "the ideal of all logicians" is nowhere to be established. Logicians understand the term "formal logic" (i.e., logic of the forma or concept) as if it coincided with "formalized logistics." History shows that.

E.O. COGN. 21.

8. The main assumptions specific to Megara's mega-retailer Filon (-380/-300) - especially regarding proposition logistics - were adopted by the current logistics.

8. The main theorems

Note.-- A conditional sentence ('sun.èmmenon') is 'true' in three cases:

Prephrase = T / Postphrase = T;

Prephrase = F / Postphrase = T;

Prephrase = F Postphrase = F;.

He is "false" in one case:

Prephrase = T / Postphrase = F;

T = true, F = is false.

Filled in: "If it is day, then there is light".

"If the earth flies, then it exists;

"If the earth flies, it has wings"

(three implications on which Philon affixes the property 'true').

"If the earth exists, then the earth flies" (Prephrase = T / Postphrase F) represents an untrue implication.

Following in the footsteps of the stoics, today's logisticians have adopted that type of propositional logic along with the concept of implication.

One sees that since Philon one 'calculates' with truth values (instead of putting the concept of 'logical' first as Platon and Aristotle did).

Logistical propaganda.

9. All the attacks against logic tested in the present work were found to be without sufficient reason or ground. Many of those attacks because of logicians came down to logical fallacies because of logistics.

Logic, on the other hand, if properly applied, works flawlessly.

10. Equally untenable proved all the attacks tested in the present work on *Carl Prantl, Geschichte der Logik im Abendlande*, (History of Logic in the Occident.), 4 Bde, 1855/1870-1, Leipzig, 1927-2, a work which invariably forms the basis of all research in this field.

Note.-- We refer to Jacoby's unraveling work for the proofs in detail. However, we will set out here some samples that make clear the profound difference between logic and logistics. We agree with Jacoby on his main thesis: logics is a way of dealing with truth values that is related to mathematics. It is best that it keep to its domain and attribute logic its place in the whole of human perception and reasoning. Only under this condition can we treat each other with mutual understanding.

In any case, logistics is a break within the traditional logical thinking that many logisticians call "natural thinking" (while admitting that logistics exhibits something unnatural: it is artificial).

E.O. COGN. 22.

Logic has as its object hypothetical sentences.

Bibl. sample: G. Jacoby, *Die Ansprüche der Logiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 59f..

To the stoa, logicians attribute hypothetical reasoning that is matter for their propositional calculus; to Aristotle, however, they attribute categorical reasoning that they incorporate into their predicate calculus.

Criticism.

1. Logistically, there is a difference between these two calculi.
2. Logically, it is completely different. There is no difference.

Categorical formulation.

All girls are beautiful. Well, Heidi is a girl. So Heidi is beautiful.

Hypothetical wording.

If all girls are beautiful and Heidi is a girl, then Heidi is beautiful.

Joh. Fr. Herbart (1776/1841) is quoted by Jacoby.

“In logic, all categorically formulated judgments are in fact, i.e. insofar as logical, hypothetical judgments. A judgment, however, does shed its hypothetical being as soon as it steps outside the realm of logic.”

Jacoby's response.

Rightly so! For logic has as its object “if, then” sentences insofar as they store either full (*note:* in a definition e.g.) or partial (analogous, i.e. partly identical partly non-identical) or absent identities.-- That is the identitive essence of logic.

Distinction.

That is the reason - says always Jacoby - why/ by which logic more sharply distinguishes purely hypothetical reasoning from mixed hypothetical reasoning. After all, logic is limited to the purely hypothetical sentences and reasonings.

In other words: it has absolutely no pretension to be applied logic or epistemology or anything beyond pure logic.

The mixed hypothetical reasoning in which a preposition expressly articulates a fact or fact as true or false or undecided or undecidable as to truth or falsity belongs either to applied logic (methodology) or to some science or philosophy or rhetoric - e.g., to logistics (in its propositional logic) - i.e., to something other than logic.

Up to there a very important distinction between logic which, among other things, therefore cannot be logistics and vice versa.

E.O. COGN. 23.

Logic is identitive.

Bibl. sample: G. Jacoby, *Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 9ff..

It is known: 'natural' logic, in all its variants in the course of its history, exhibits a single structure : understanding, judgment, reasoning. This confirms e.g. *Jörgen Jörgensen, A Teatise of Formal Logic*, New York/ London/ Copenhagen, 1931.-- The question arises : what axiomata stand behind this classification?

'Logical'.

Logic begins with the definition of the term "logical.

It reads "(validly) derived" (from presuppositions) either definitively (deduction) or provisionally (reduction). That deduction is the act of a subject or I, a person,--not of a machine unless by accident.

This same derivation relies on powers - in ontological language : realities ('being') - that exhibit either total identity (with oneself) or partial identity (analogy) (with something else) or non-identity.

In other words: is the derivation as act the subjective aspect, its reason or ground is the objective aspect.

Identitive..

'Identitive' is "all that has to do with total, partial or absent identity".

In other words, not identity per se but its variants are central to all that is called "logical."--"All that is (so) is (so)" interprets total identity. "This flower resembles that flower" refers to partial identity. "This flower grew out of the earth" likewise refers to partial identity. "2 + 2 does not equal 5" expresses non-identity.

Definability.

What has just been mentioned is seen. To prove, i.e. to deduce from preconceived sentences, is nonsense.

Descriptions.

In the really traditional anthologies, "identity" is called "unity. Something - being, reality - is totally one with itself, is partially one with something else, is not one with its opposite.

This is known in the Latin of scholastic anthologies as "Ens et unum convertuntur" (All that is reality is somewhere one; - totally one, partially one or not one). For the sentence is a summary slogan which, under the term 'one', means all its variants (which is often 'forgotten').

E.O. COGN. 24.

Common feature.

This concept, which plays a leading role in set theory, among others (order concept), is another word for “partial identity or analogy”.

Thus: “This flower and that flower exhibit as a common characteristic “red petals” such that they resemble each other”. They are under point of view of “red petals” one, or identical.

Or so: “2 + 2 and 4 exhibit as a common property “the sum ‘1 + 1 + 1 + 1’” (summering) and thus as summering of four units they are identical or one. Yes, “identical” (i.e. as a sum interchangeable).

Note.-- It is seen that a multiplicity is brought to unity by virtue of partial identities (analogies) or common properties. That explains why the ancient thinkers thought both “multiplicity and unity” together as pairs of opposites,-- as unities of opposites. In ancient Greek: *sustoichia*. Dutch: “*systechy*.”

Critical ‘definitions’.

G. Jacoby mentions some of them.

H. Reichenbach.-- This states that “all that is equal to itself” is identical.

Jacoby.-- The term “itself” already presupposes the identity to be defined. The term “equal to” is thought valid only of “something equal to something else,” not of itself!

By the way: the mathematical equal sign ‘=’ does not denote identity with itself. A number of logics between 1880 and 1850 thus confuse “A = A” with the identity axiom “A is A”. (“All that is so is so”).

D. Hilbert/ Ackermann, Grundzüge der theoretischen Logik, (Basic features of theoretical logic,), Berlin, 1938-2, states : “x is identical with y insofar as (if and only if) every predicate (saying) that fits x also fits y and vice versa.”

If a predicate fits more than one subject, then this suggests that more than one reality exhibit one or more common properties and are thus analogous, but certainly not (totally) identical.

Conclusion.

These two examples clearly show how little rigor logicians devote to defining, or rather trying to define, a basic concept such as ‘identity’ (with or without its variants). Their mania for using (mathematical-like) formulations at all costs plays tricks on them: they look outside the box!

E.O. COGN. 25.

Logic: contradiction-free but not axiomatic-deductive system.

Bibl. sample: G. Jacoby, *Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 52/53.

“Axiomatic-deductive system” is a set of assertions with a finite number of axioms in front, together with rules of derivation, which lead to theorems derived from the axioms.

1. Logicians claim that natural logic is an axiomatic-deductive system, namely, as a small part of the total system of logics that understands itself as an axiomatic-deductive formalized system.

To which Jacoby: “Logic is a conclusive set of statements but not an axiomatic-deductive system”. For according to e.g. H.Scholz, in A. Tarski’s trace, a class of expressions K is deductively conclusive insofar as one does not get outside the system K by deducing from the axioms. In other words : all derivations from K coincide with K. Well, logic is not.

2.1. Logic: both reductive and deductive.

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

Platon knew perfectly the two basic types of reasoning.

‘*Sunthesis*’, (deduction).

If all flowers are beautiful and if this lily is a flower, then this lily is beautiful.

‘*Analisis*’ (reduction).

If this lily is a flower and this lily is beautiful, then all flowers are beautiful.

The latter reasoning gave rise to the lemmatic-analytical method (lemma = provisional interpretation) of which Platon was the initiator in antiquity. And which culminates via Viète in modern analysis (mathematical, logistic).

2.2. Understanding, -- judgment, reasoning.

This order is mere didacticism but not logic.

There is a single axiom: “All that is, is.” This places full identity with its negatives (analogous and absent) at the center.

The contradiction axiom is merely an explanation of this. But precludes contradiction within logic and its logic applications.

Note -- Just like ‘being(de)’, ‘one’ (= identity) as a transcendental concept is empty as long as nothing else is added. From identity one can thus deduce nothing. As *Aristotle*, *Peri herm.* 3, in fine, clearly states.

The axiom of “excluded third party”.

Bibl. sample: G. Jacoby, *Die Anspruche der Logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 55/61 (Aussagelogistik).

Combining propositions into a contradiction-free, symbol-calculating system such that the correctness/incorrectness of the propositions so combined depends only on the combined system : this is what logistics wants.

Logic, however, treats propositions insofar as they salvage identity and partial or absent identity.

The principle of excluded third party.

Logicians claimed that they had “overcome the principle of excluded third.” -To which Jacoby.

1. “Something is (so) or is not (so)”

Understood, “every third thing is excluded.” For it is about the full identity of that something.

Jacoby states, “No one denies that, for without it no unified concept” (o.c., 58)7-The question arises, “What is it about, then?”

2.1. Beginning with a thesis:

“Purely logically one can pretend. But then, for example, we end up in the world of the liar”.

2.2. Multi-value logistics.

I. Bochenski, Formele Logik, Freiburg/ Munich, 1956.

“A proposition of which we do not know whether it is true or false could possibly have no well-defined value concerning truth or falsity.

One could hold the opinion that the proposition “I will be in Warszawa next year” is neither true nor false and has the third undefined value which we denote with the symbol ‘1/2’.”

Jacoby.-- “The confusion between truth and determinacy is finished here” (ibid.).-- After all, in logic, ‘true’ means “that which is identical with the objective circumstance (that which is)” Contradictory with this is ‘false’ (because not identical with the circumstance).

In this sense, logic is radically two-valued and in no way three- or more-valued.

Logically, however, there is e.g. ‘true’ (testable and therefore decisive), ‘false’ (testable and therefore decisive) and a third ‘value’, namely ‘untestable and therefore undecidable’. But then one is no longer in the hypothetical sentences of logic but in the testable-decidable propositions of logics.

Concept (term) and name or word.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 491ss..

Lahr is a “natural” logician. Here is what emerges from his exposition.

1. Our notions - as just mentioned - are the presence or absence of “facts” (to use Jacoby’s word again).

Note.-- ‘Presence’ according to the scholastic maxim “Ens et verum convertuntur”. ‘Verum’, Latin for Greek ‘alèthes’, means “what shows itself” (what is directly given).

Practical : all that is, is either totally correctly stated presently or partially or not stated presently.

2. Our concepts are expressed in “terms” (Lat.: “termini”). This term means “all that is language sign”.

As Lahr emphasizes, do not confuse “term” (total linguistic representation of a concept) and word;

Thus : “two girls” expresses the same concept in two words and these two words together make up a term.

As an aside, an algorithm is one term but composed of many words and even signs of a non-linguistic nature (e.g., a geometric figure). As long as these state the concept today.

Thus “greater than” is one term (concept) expressed in two words. Or still, “grown from the earth”: one term (term) but four language characters.

So much for the essentials regarding understanding/ term.

Content/Size.

Latin: “comprehensio/ extensio”.

Thus, “two girls” refers to two specimens (“elements” says the set theory) as a limited size (actually a sample) to which the conceptual content “girl” refers. Thus “Mathilde d’ Udekem d’ Acoz” refers to a damsel. Thus “the betrothed of Prince Philip” refers to a young woman who is engaged to him.

That both terms refer to one and the same person is nowhere apparent from their pure conceptual content. In Kant’s language : there are no “analytical” judgments possible which show the unity of both terms. This unity is only clear - “phenomenologists” or “directly given” - if, apart from these terms, one investigates what is the exact act to which both terms refer. But that they both refer to the same person is, in Kant’s terms, a “synthetic” judgment, i.e. a proposition which is only possible through testing.

Concepts : distributive/collective.

Bibl. sample: *Ch. Lahr, Logique*, Paris, 1933-27, 492/494 and 499/500.

Natural logic works first of all with concepts (conceptual logic). These invariably exhibit a twofold aspect : content and scope. Let us now turn to these, for judgment and reasoning depict them.

Example.

The concept of ‘humanity’ can be interpreted in two ways.-”All girls are beautiful” (distributive) and “All girls together make up the one girl world.” Towards ‘humanity’: “all people” and “all humanity:

Platon has the pair of opposites “all/ whole” for this and the scholastic “totum logicum/ totum physicum” (a class (mathematical: collection) and a system (system)). Here we are immediately faced with two forms of thinking: the class theory and the systems theory.

Scope.

The classification of a scope can be seen in two ways. The distributive classification pays attention to all specimens individually, while the collective classification pays attention to all portions (aspects, subsystems) collectively. All copies constitute the class (all girls, all people). All portions form the system (the whole human being (the whole girl) or the whole humanity (girlhood)).

Platon.

E.W. Beth, De wijsbegeerte der wiskunde, (The Philosophy of Mathematics,), Antw./ Nijmeg., 1944, 36/37, cites a Platonic text which proves clearly and unambiguously how Platon sees the idea and distributively and collectively,--in his *Theaitetos-revision* in *Filebos* 18b/d.

a. Distributive.

The Egyptian story says that Theuth classified the letters into vowels, consonants and semi-vowels. “He called each of them and all of them together ‘letters.

b. Collective.

None of them can be “taught” separately, “without all the others” (dichotomy, complement),-- believing that there is a connection that made them all one.

A science.

The idea ‘letter’ (‘gramma’) thus decays into two aspects and awakens in our mind in a dual concept, a distributive and a collective concept. Only these two human concepts together are, in our poor mind, an ‘image’ (model, information) of the idea as Platon understood it. immediately Platon assigned all this to a science - ‘grammatike’-.

Judgmental structure.

Bibl. sample: K. Bertels/ D. Nauta, *Introduction to the model concept*, Bussum, 1969, 28.

Leo Apostle's definition.

Given.-- The realities ("systems" says Apostle) O, the unknown, and B, the known given.

Asked.-- "If B, the known, provides information about the unknown (= original), then B is a model (which provides information) of O."

This information amounts to either total identity (O/B) in a definition of O or partial identity (O/B) or non-identity (O/B).

The verdict

In a judgment, the subject as original asks for information and the saying as model provides that information.

1. Metaphorical model.

This relies on resemblance, a type of partial identity.-- As the cockerel leads the chickens, so does Johnny lead his companions. Jantje resembles the rooster in this role.

Metaphorically, "Jantje is (is = similar to) the cockerel of comrades". One senses the distributive structure.-- 'Johnny' = original; "is the cockerel for ..." = model.

2. Metonymic model.

This relies on coherence, another type of analogy (partial identity).-- As a cause causes its effect, so good nutrition causes health. Good nutrition is causally related to health.-- metonymically: "Good nutrition is (is = is related to) our health."

"Good nutrition" = original; "is our health" = model.

Note.-- All judgments are either metaphorical or metonymical regarding information provided by the saying. Both forms rely on partial identity. - The definition is a separate case: it involves total identity of subject and proverb.

Note.-- It is seen that the judgment theory of natural logic is not a logistic theory.

G.Jacoby rightly criticizes the fact that in logistics the actual factuality ("truth" called) plays such a dominant role. The truth-values (true, not-true) fall outside logic (they come into play in applied logic) because the conceptual contents are decisive and not the actual truth or falsehood. Truly no small difference.

At once, natural logic does not want to be epistemology: this branch of philosophy is interested in actual truth of judgments, while logic pays attention to the justifiable connection between preposition(s) and the postposition or conclusion.

Generalization/ generalization.

Bibl. sample: Ch. Peirce, *Deduction, Induction and Hypothesis*, in: *Popular Science Monthly* 13 (1878): 470/482.

Peirce distinguishes three distinguished syllogisms or closing arguments.

1. Analytic conditional sentence.

Deduction.-- Rule.-- All the beans in this bag are white.-- Application.-- Well, these beans are from this bag.-- Result.-- So these beans are white.

Note.-- The pure conceptual contents put together necessarily lead to the conclusion that takes place on an analytical basis.

2. Synthetic conditional sentences.

Peirce calls them induction and hypothesis (abduction).-- We call them “generalization” and “generalization.

2.1. Generalization.

These beans are from this bag. Well, these beans are white. So -- unless testing proves otherwise -- all the beans in this bag are white.-- Where testing proves definitive, the conditional sentence is “synthetic” (in the Kantian sense).

2.2. Generalization.

All the beans in this bag are white. Well, these beans are white. So -- unless testing shows otherwise -- these beans are from this bag.-- Again, clearly ‘synthetic’ (needing testing before ensuring conclusiveness).

The proper interpretation.

The expression “this bag” is either distributive (and leads to generalization) or collective (and leads to generalization).

Note.-- Just as the term “general” (universal) leads to “generalization,” so the term “overall” (a thoroughly known word) leads to “generalization.

Peirce knows that “some logicians” identify both reasonings, so to speak. Yet he argues that the generalization rests on the relation “cause/effect”.

Criticism.-- In that case, he pays attention to the hand gesture that takes a portion of the beans from the bag. Whereas the reasoning actually relies on the bag as a collective concept (and not, as in the generalization, on the bag as a distributive concept).

Conclusion.-- Natural logic does not stand or fall with concepts but with either distributive or collective concepts. In other words: it is platonic through and through. Platon clearly saw the “all/whole” couple at the time. As the scholastics clearly saw the “totum logicum” and the “totum physicum”.

Quant(ificat)ears.

Bibl. sample:

-- K. Döhmann, *Die sprachliche Darstellung der Quantifikatoren*, (The linguistic representation of the quantifiers,), in: A. Menne/ G.Frey, Hrsg., *Logik und Sprache*, Bern / Munich, 1974.3 92/118;

-- Chr. George, *Polymorphisme du raisonnement humain*, (Polymorphism of human reasoning,), Paris, 1997, 65/84 (*Le raisonnement avec des quantificateurs et des variables*), ((Reasoning with quantifiers and variables)).

Summary by Logistics;

The Aristotelian logic of scholasticism is summarized by George as follows.

1. Scholasticism reduces each proposition to the schema “S is P” (= subject - copula (being)- predicate).

2. On quantifiers, scholasticism employs “the logical square.”

All S are P/ No S are P and Some S are P/ Some S are not P.

Critiques.-

We briefly go over.

1.1. The schema “S is P” does not fit e.g. “Aristotle speaks” because ‘is’ or ‘are’ is not there.

To which the scholastics: whoever says “Aristotle speaks”, situates that statement in reality (in scholastics ‘his(de)’) and thus says “Aristotle speaks” (under understanding: So it is. For what (so) is, is (so)”). The copula m.a. may be explicitly stated or not but it ‘works’ ontologically.

1.2. The scheme “S is P” does not fit the expression of relations. To which the scholastic:

a. that diagram is a kind of summary;

b. “Aristotle is more famous than Philon” fits that scheme if it is not logistically misunderstood. For “P” stands for an adjective or noun as well as a relation. After all, “more famous than” is one term (and ipso facto a term) but expressible in a plural of words.

By the way: a relation is a property of something insofar as thought including something else to which it is involved. The scholastics think Aristotle and Philon together (if not one sees no relation between the two). Then she says “S (Aristotle) is (copula) more famous than Philon (P).” Those who confuse words with terms misunderstand what scholastics mean (and project non-scholastic into scholastic language).

2. A sentence like “Socrates is mortal” and one like “All humans are mortal” are logistically unequal because the second sentence fits into the logistics regarding inclusion of classes and the first does not. That may be true thus in logistics but not in logic.

3. George dwells on the infamous “ontological proof of God”. From the mere human notion of a “perfect being” (by which one then means God) that includes actual existence as one of its attributes, one concludes to the actual existence of that “perfect being.”

George claims that such evidence “for nearly two thousand years” could come across as convincing.

Since I. Kant is so called the proof of God first proposed by Anselm of Canterbury (1033/ 1109) - which is a little less than two thousand years (!) - which attempts to “prove” God’s existence from the pure concept of “perfect being” without any other presupposition.

In fact, Anselm was talking about “the absolutely greatest being” above which there can be no greater. Such a being which exists necessarily is greater than a being which possibly exists “in our thinking” and at once does not exist naturally. -- His contemporary Gaunilo: “If this is true, then an island above which there is no greater also exists being-necessary”!

In other words, even in the early Medieval Ages people were not so naive about this.

What is relevant with George, however, is that one must use the verb “to be” with great caution. According to George, logistics circumvents such difficulties by

- a. the introduction of n-stellar predicates,
- b. of propositional functions,
- c. the reduction of the quantors to two: “for every x it holds that (universal quantifier :V)” and “at least one x exists such that (existential quantifier: \exists).--

Note.-- “x is an integer” is a function that becomes a propositional function if the variable (variable) is replaced by e.g. 1: “1 is an integer” is a true proposition while “1/2 is an integer” is an untrue proposition .

Also to note: the scholastic quantifier ‘some’ (“Some girls are pretty”) is transformed in the logics to “at least one and maybe all.”

Note.-- Which in natural logic leads to a paradoxical proposition: “Some may therefore in an extreme case mean all”. For those who argue that ‘some’ is replaced by ‘at least one and perhaps must identify ‘some’ with ‘all’.

We leave the logistic “logic” for what it is. Only this: it is not natural logic. That distinction must be respected.

The scholastic position.

Are we going to briefly address that now.

1. *Distributive/Collective.*

Döhmann, a.c., 98, notes the highly developed tendency of natural languages to distinguish distributive and collective totality.-- The Platonic systechy “all/ whole (class/ system) elevates this on a strict philosophical plane.

2. *Quantity/Quality.*

G. Jacoby, *Die Ansprüche der logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 60, argues that in natural logic the quantity of the subject and the quality of the saying (yes/no) are logically meaningful. With in the background the full, partial and absent identity.

3. *Logical square.*

See. Both distributive and collective.

A--All the girls are beautiful.	Entire landscape is beautiful.
E--All the girls are not beautiful.	Entire landscape is not beautiful.
I --Not all the girls are beautiful.	Not all the scenery is beautiful
O--Not all the girls are not beautiful.	Not all the scenery is not beautiful.

One sees that the schema “S is P” figures in eight variants. Thus e.g., “All S are P” or “Not quite the landscape (not quite S) is not beautiful (is not P).

Note.-- Döhmann, a.c., 97, states that in natural logic regularly finds “some” for “not all. According to him, in natural languages this means “a small number; “at least to the exclusion of “just one.

That may be true for natural languages but in scholastic logic “some or a small number” is only a sample from the total concept of “not all” or “not whole.” Neither (singularly) “just one” or (privately) “a large number” or “almost all, almost whole” in any case all; for then non-all would be identical with all.

Note.-- Döhmann, a.c., 93, sees the quantifiers depicted in the modalities.

G. Jacoby, o c., 61, sees three strictly logical modalities:

necessary/not necessary (possible, not impossible)/necessary not.

According to the full, partial or absent identity reflected in those modalities.

Note.-- Jacoby repeats it regularly: “die Identität und ihre Verneinungen” (the identity and its negations), (where ‘Verneinungen’ means the negation of total identity). With great reason.

Logic on relations.

Bibl. sample: G. Jacoby, *Die Ansprüche der Logistiker auf die Logik und ihre Geschichtschreibung*, Stuttgart, 1962, 53/55.

The author begins with V.Kraft, *Der Wiener Kreis*, Wien, 1950, who asserts the following.--"The mathematical statements do not fit into the construction of the judgment as traditional logic conceives it, i.e., "subject/ linking word/ proverb."

Reason: mathematical statements formulate relations.-- Statements that attribute to a subject a saying apply to 'properties' and to 'classes'. But relations which consist essentially of two or more data involved ('relata'), do not allow themselves to be so properly expressed."

To our days logicians whine about the so-called impotence of logic on relations. Let us see with Jacoby for a moment.

1. Jacoby's global response : "That's right concerning class logic. Not in logic that works with concepts".

2. Some applications.-- Mathematical and other examples. -- The mathematical expression " $3 > 2$ ".

Logically, "The relation "greater than" has one application in the copy " $3 > 2$ " " $3 > 2$ ". So " $2 < 3$ ".

Logically, "The relation "greater than" is reversible in "less than". Well, " $3 > 2$ " is one case of "greater than". So " $2 < 3$ ".

One sees this is a perfect natural-logical syllogism!

G. Klaus, *Einführung in die formale Logik*, Berlin, 1958, states:

"Aristotelian logic is not suitable for a logistic reasoning like "x is smaller than y and y is smaller than z. So x is smaller than z".

Jacoby's logical response: "x and all that is smaller is smaller than y and all that is larger. Immediately z is larger than y. So x is smaller than z".

Note -- One sees that tradition does reason with relations.

G. Klaus states; "If point O lies between A and B (an interval), then it also lies between B and A".

To which Jacoby: "Relata (data involved) within an interval (spacing) remain within that interval even if the ends are exchanged. Well, O lies between A and B. So, when exchanging A and B to B and A, O remains between B and A."

Again, from a universal rule to an application.

Note.-- One sees that Klaus, where he states that only the mathematical concept of ‘function’ (also present in mathematical physics) together with the combining, peculiar to algebra, can handle mentioned reasoning, testifies to a lack of understanding concerning logic.

D. Hilbert.-- Logically, “If there is a son, there is a father”.

Logically, “A son without a father is biologically impossible. Well whenever there is a son, there is a father. So “whenever there is a son, there is a father”. Hilbert’s statement is logical consequence of a universal preposition that the logician does not even mention.

Afterword.

1. The logistic reasonings above are -- coincidentally or not -- in fact “immediate reasonings” (relying on a quasi-universal evidentiality). In fact -- logically, not logistically -- they are “enthymemes,” i.e., reasonings that omit one or more statements, -- can omit them precisely because they express evidences.

2. Again, “ $3 > 2$ ” or “ $2 < 3$ ”. -- More generally “greater than or less than” are perfectly logical terms (concepts) but expressible in a plural of words or a plural of language signs (:).

Logicians, within logic, confuse words with terms (concepts) because they project their use of language into logical language.

Tome. - Following Peirce’s syllogisms.

Deduction.

All the beans in this bag are smaller than those in that bag. Well, these beans are from this bag. So these beans are smaller than the ones in gene bag.

Induction.

These beans are from this bag. Well, these beans are smaller than the ones in gene bag. So all the beans in this bag are smaller than the ones in gene bag.

We call this reasoning “generalization.

Hypothesis.

All the beans in this bag are smaller than those in gene bag. Well, these beans are smaller than the ones in gene bag. So these beans are from this bag.

We call this form of reasoning ‘Whole-ization’ or globalization because one reasons from a part (of the beans) to the whole (here called the ‘bag’) of beans, which are thus interpreted as a collective. Whereas in the generalization the same beans are referred to as specimens of a class (collection).

Who says there that logic cannot reason with relations?

Reason logistically and logically.

Bibl. sample: D. Kayser, *Logique*, in: O.Houdé et al, eds., *Vocabulaire de sciences cognitives*, Paris, 1998, 250/255. Subtitle: “artificial intelligence”. Which says enough. See here how Kayser introduces.

The adjective “logical,” insofar as intuition is at work, refers to “a certain common sense” that exhibits its own form of reasoning and its own “rationality.

The term ‘logic’, - used here (understand: logistics) - has but little to do with said intuition. Technically, then, logistics is defined as “an (artificial language (‘langage’), a deductive system and a calculus (logistic processing) that is interested in truth value.”

Such logistics - we translate its “logic” by what it really represents - is an essential tool in artificial intelligence but also in other cognitive sciences (psychology, linguistics, philosophy of mind).

Note -- In other words, this text, the almost literal translation of Kayser’s French text, does not lie : not natural logic but logistics!

Note.-- The rest of the article is a summary of the most basic elements of logistics. Beginning -- as it should best -- with propositional logistics as (artificial) language.

I.-- Natural language and logistics.

Bibl. sample: K. Döhmman, *Die sprachliche Darstellung logischer Funktoren*, (The linguistic representation of logical functors), in: Alb. Menne / Gerh. Frey, Hrsg., *Logik un Sprache*, Bern/ Munich, 28/56.

The work starts from the logik (‘Logik’ of course) to find out what can correspond to it in the natural-logical language.

Here we are concerned first of all with the “functors” (propositional signs).

Note.-- They picture in functors or what in natural logic means ‘identity’ (full, partial and absent).

p and $\neg p$ (negate) (affirmative sentence and negative sentence). Cf. “well” and “not.

$p \wedge q$ (conjunction of two propositions). Cf. our ordinary ‘and’.

$p \vee q$ (disjunction (“sheet”)). Cf. “both p or “.

$p \vee\vee q$ (radical disjunction (‘aut’)). Cf. “either or” (only one of the two, p or q).

p / q (exclusion, exclusion).

Cf. “at most one of the two: (implication, encompassing). Cf. “if (true), then (true)”.

Note.-- Cf. “no p without q” (so “no roses without thorns”) or “always if p, then q” (sufficient condition, i.e. p is necessary and more than p is not necessary to have q) or “only if p, then q” (necessary condition, i.e. at least p is necessary to have q). In Latin, “conditio quacum semper” (sufficient condition) and “conditio sineque non” (necessary condition).

As an aside, this pairing - especially in natural logic - is of a very important nature. Thanks to the distinction, many misunderstandings of causality can be avoided.

Difference natural logic/logistics.

Döhmann clearly notes. “From p follows q” is just one application of the logistic implication.

Better expressed: just an interpretation of the scheme “if, then”. Indeed, in that case, the contents and of p and of q hold such that the content of p decides the content of q. That is the sense of the ordinary logical (natural-logical) derivation. ‘Follows’ means ‘follows content’ (and thus naturally logical). However, the empty shell of logistics is fillable by also non-content (coherent) fillings.

Note -- Even in the case of non-identity, the truth value ‘holds’ to some extent in the logistic implication.

Modus ponendo ponens.

According to Döhmann: “From p ---> q and p (if p, then q and if p) logically follows q”. This implication holds in all cases (whether or not between p and q there is a substantive connection).

$p < --- > q$ (equivalence, mutual implication). Cf. “both or no one; (in any case not one alone)”.

Follow another set of logistic functors.

Follows a balance not to be summarized here. Well this : the logistic language is not always the same as the natural-logic language. Also: the natural-logical language is usually incapable of calculus (i.e. artificial processing of symbols).

Note -- The author forgets to add that this is also not the intention of the natural-logic language user. If the latter deems it necessary, he will know what to add to his natural logic if need be in order to “calculate”.

II.-- *The bizarreness of some logistic derivations.*

Bibl. sample: Chr. George, *Polymorphisme du raisonnement humain (Une approche de la flexibilité de l'activité inférentielle)*, (Polymorphism in human reasoning (An approach to the flexibility of inferential activity)), Paris, 1997.

The work is a comprehensive account of numerous psychological investigations into the factual - and thus mostly natural-logical - reasoning of a number of subjects (quite a few Americans). Axiomatically, it is postulated that logistics is the best mastery of valid forms of reasoning.

Hypotheses.

Some researchers stick to the theory of “formal” (understand: formalized) rules of inference as the basis of actual reasoning.

Others espouse a theory of mental models. Still others postulate a kind of connectionism.

Disagree they do, the logistic-psychologists. Cfr o.c., 36 and 40.

Those hypotheses, in our humble opinion, reveal the absence of understanding of what natural logic actually is, o.g. a projection of logistics into logic. Yet we move on to more concrete data.

Implicit logistics.

O.c., 47ss. George dwells on a set of “inferences” (derivations). Of these we quote the following two.

8. If France is in Europe, then the sea is full of saltwater.

9. If elephants are pink, then $2+2 = 4$.

W. Quine, *Methods of Logic*, New York, 1950, notes - argues - that 8 appears ‘alienating’, “for there is no uncertainty - either about the ‘antecedent’ (antecedent) or about the ‘postcedent’ (consequent) -”.

(1) It is not customary to use a conditional sentence to express what is already unconditionally known (understand : recognized as ‘true’, understood).”

Note.-- The ‘underlying’ typical logistic proposition is that only the (otherwise usually actual) truth value of the shells to be filled in is paid attention to (insofar as the fill-ins ‘instantiate’ (exemplify) that truth value).

(2) It is equally unusual to use the conditional mode to ‘connect’ (by if, then) two propositions which apparently have no natural-logical connection. Or in logistic language : whose contents do not count.

Quine seems to marvel that such a thing is “unusual”!

Experimental Review.

George refers to *B. Matalon, Etude génétique de l' implication*, (Genetic study of the implication), in: *E. Beth et al., eds., Implication, formalisation et logique naturelle (Etudes d' épistémologie génétique)*, vol. 16, Paris, 1962.

Review.

Given.-- Sentence 9 (If elephants ...) together with similarly structured sentences. A group of pp. who are “des profanes” (literally ‘uninitiated’, i.e. in logistics).

Asked -- “What think ye of such statements?”

The pp.: “Absurd or false”. Which makes clear the acceptability by the uninitiated of such sentences! In fact, it is incomprehensible for psychologists to think up tests for this purpose: surely every normal person knows that non-logistically shaped people will react in the way the test groups did! Or are the researchers so convinced of the logistics as already present in the pp. without any logistic formation?

George states: the statements of the pp. concerning 9 confirm what Quine said. Quine : “What is at stake in such reasoning as 9, is less the truth conditions than the expressibility (how can one express such a thing,)”.

Indeed: non-logisticians do not pay much, if any, attention to the degree of truth (and even then the actual degree of truth) of the prepositional phrase and the postpositional phrase per se (outside of natural-logical context) as fillers of the blanks; they do pay attention to the meaningfulness, i.e., the natural logical character of the derivation.

For them, such sentences encounter incorrect prefixes and postfixes. Unless they were warned about what logicians mean by that!

Unwittingly, they pay attention to the identities (here: partial identities) between contents, as all natural logic has done for centuries.

The pp. state, “The color of elephants has nothing to do with numbers.”

To be pronounceable a conditional sentence must be:

- a.** contain an uncertainty regarding the truth of the antecedent,
- b.** contain an uncertainty about the truth of the consequent that disappears if the antecedent is true,
- c.** contain an intelligible relation between antecedent and consequent (or at least a relation of possible intelligibility). But yes, as George confesses, 9 piles on the bizarre.

Reductionism(s). (40/47)

D. van Dalen, Formal Logic (An Informal Introduction), Amsterdam/ Utrecht), 1971, 7, says that “mathematics is concerned with idealized objects that do not have the disturbing properties that objects in ‘reality’ do.”

One of the purest forms of this idealized mathematics is the axiomatic method. This idealization includes ‘consistency’ (freedom from contradiction): no contradictions may be inferred from previous axioms and theorems; “In everyday life we encounter contradictions every day, and one has found an effective remedy for this: ‘Just don’t talk about it and nonchalantly look out the window’” (o.c., 34).

Bibl. sample: *B. Mols, The holy grail of the sciences*, in: *Nature and Technology* 67 (1999): 7 (July), 50.-- Following *Edw. Wilson, The foundation (On the unity of knowledge and culture)*, Amsterdam, 1998, Mols criticizes the sociobiologist Wilson with his reductive thinking.

a.1 Physics generates chemistry which in turn generates biology.

a.2. The latter generates the humanities and humanities. “As if all this were not radical enough, we distill once more from human evolution and genetics the human arts and culture” (literally Dols).

b. On that narrow base that is ultimately physics, Wilson points to the development of our understandings and our entire culture.

Reductionism.

Axiomatics, since Aristotle already, limits itself to a finite and as limited as possible number of axioms. It ‘reduces’! In a ‘reality’ existing in the mere imagination, such as the mathematical entities are one, this is easy.

But to ‘derive’ (sic) all human reality from physics, albeit in a cascading fashion, “unfortunately makes no mention of both the practical and fundamental problems that Wilson’s project of radical reduction entails.” Wilson simply does not talk about it, and nonchalantly he merely looks through the window of his physics.

Whether that is consistent with the overall reality in which we live is not even a given for Wilson, -- let alone a demanded one. A solution, then, he does not even seek.

Biogenesis.

Bibl. sample: H. Priem, *It rains life (Biological cosmology)*, in: *Nature and Technology* 67 (1999): 2 (Feb.), 68/77.

See what this professor of planetary geology (Utrecht) says.

1. **'Life'** is to be described, not defined.

Note -- Describe as provisionally define. A creature definition is not (yet) seen by the proposer.

2.1. Distinctiveness.

Living matter differs from the dead in that it organizes as living molecules. This manifests itself through life actively interacting with the environment such that chemical mixtures (containing mainly hydrogen, carbon, nitrogen and oxygen) react to form complex compounds. This also manifests itself because life copies itself.

2.2. Organisms.

The molecular organization takes the form of a dynamic (purposeful) system that opposes the environment through a membrane. Yet this system is only quasi-closed because it exchanges matter, energy and information with the environment.

Thermodynamic.

Seen from that branch of physics, living organisms differ from the environment which is essentially "disorder" (decaying matter and energy until heat death), by "order(ning)"; i.e., order result from order (organization). The author calls living organisms "islands of order(ning)" amidst an ocean of disorder.

Biogenesis.

"How life originated is still an unsolved question." (A.c. 68).

The established scenario says that the first life would have arisen from a succession of spontaneous chemical reactions within an environment of liquid water and under supply of energy (solar radiation or e.g. volcanic heat).

In any case: all life (from the bacteria to the higher animals) organizes the same chemical reactions, the same molecules with the same structures. All varying environments (and adaptations notwithstanding). This is called "complexification."

Extraterrestrial.

The opinion is growing, based on real indications, that the chemical origin of life is largely extraterrestrial : from physical to biophysical cosmology!

Causality.

Scenario.

For a long time the sun has been rising in the morning and setting in the evening. Only M. Kopernik (Copernicus) (1473/1543) - perhaps preceded by a Greek or even an easterner - figured out the phenomenon as caused : the earth revolves daily around its axis and it has a career - yearly - around the sun. That 'explains' sunrise and sunset.

Application of a rule: "To which attention is never drawn, to which one never learns to pay attention" and "To which one does not pay attention, one does not or hardly experience".

In other words: we know causality by means of "intentional acts". If these are not there, then causal processes take place but we do not even know it.

Bibl. sample: Ch. Lahr, *Logique*, Paris, 1933-27, 591.

Baconian induction is one type of induction: from one or more samples concerning the relationship "cause/effect" (O/G) one generalizes to all possible cases of "cause/effect". This is called, if proven, a (natural) law.

Note.-- Note that the connection (partial identity) "cause/effect" is based not on similarity (a cause is not similar to its effect or vice versa) but on coherence.

Consequence: the dynamic system "cause/effect" is the actual object of induction.

Modernity.

Francis Bacon of Verulam (1561/1626), known for his seminal work *Novum organum* (1620), wanted to see nature "tortured" (model : the Inquisition) so that it would reveal its causal processes,--with the ultimate goal of the subjugation of nature so that, by understanding its causal processes, that nature would become predictable. This they are if they prove to be lawful.

Who does not recognize in it the artery of cognitivism? Cognitivism that thereby shows itself as typically modern.

Indeed: an Anaxagoras of Klazomenai (-491/-428) is known in Greek antiquity for his physics and particularly causal method. In this sense, he is ahead of Bacon. But the ancients were not keen on the torture and predictability of nature as the moderns are.

It is only with the late middle ages and the Renaissance that nature gets the brunt of an inductive physics.

Causality and conscience.

Beginning with a scenario.

One morning - on leaving for work - you find that your car ‘refuses’. It is fresh from the garage. The garage owner was formal: “Your car runs perfectly”. There are two aspects to this event:

- a. the causality of your car this time is “in error” (non-lawful);
- b. the reliability of your garage owner - who, as you now recall, does not shy away from unscrupulous behavior, - is immediately “at fault” as well.

In other words, both physical and ethical predictability show themselves in such situations, -- as they may in fact be.

Bibl. sample: *H.J. Hempel, Variabilität und Disziplinierung des Denkens*, (Variability and discipline of thinking), Munich/ Basel, 1967, 17/21.

The author lists the axioms of natural logic. In ancient times they were called ‘archai’ (Lat.: principia). Now they are called ‘laws of thought’. Because they turn out to be unprovable and yet constantly function as presuppositions in logic, we call them ‘axioms.

a.1 Identity.

“Something is what it is.” “Something is as it is”. “If something is there, then it is there”. -- The identity articulated here is twofold: actual existence (existence) and being (essence).

Phenomenology. -- What shows itself, shows itself. What is given, is given. Ontological “What is true is true”.

Note.-- The Tarski equivalences have their logical -- non-logistic -- ground here: “An apple is tastier than a pear, if and only if “an apple is tastier than a pear”. The verb “is” speaks for itself. (*L. Horsten, Truth and semantic paradoxes*, in: *Our Alma Mater* 50 (1996): 2 (April), 342).

Hempel.-- “Every object is equal to itself”. This is the discursive interpretation. It means that a term, once defined, must remain equal to itself in the course of a discourse, exposition.

I.e.: don’t give new undefined meanings to a term while you are in the process of explaining it.

This is a derivative of the logical axiom but not the axiom itself. One adheres to what one has indicated as the identity of a term as long as one uses that term.

A dialectical interpretation of identity is found in Hegel.

Bibl. sample: G. Bolland, Hrsg., *G. Hegel's Encyclopedie der philosophischen Wissenschaften*, Leiden, 1906, 156.

Thus: "The sentence "Everything is identical with itself" ($A=A$) is (...) nothing unless a statement of the abstract mind. (...)". "A planet - is a planet.

"The magnetism - is the magnetism": Hegel actually ridicules a piece of logic of his time in the name of his "variology" (emphasizing as possible synchronic and diachronic variations (changes, reversals to the contrary).

But he forgets (represses, represses) that the constant changing which he situates at the heart of reality is experienced and thought of by him as "being there". "What becomes, changes, turns into its opposite, that becomes, changes, turns into its opposite" This confrontation ("encounter") forces, if he respects becoming as fact, to the definition of identity as natural logic has formulated it for centuries.

a.2. Contradiction.

"Something cannot be (so) and not be (so) at the same time. It is either one or the other, radically opposite.

a.3. Exclusion of a third possibility.

"Something is (so) or it is not (so). A third possibility does not exist".

Note.-- These two axiomata have no meaning of their own. They specify what the first axiom actually means : the identity of something is the identity of something and not (of) something else. What is meant is the total identity of something with itself, of course.

b. Reason (ground, explanation).

"All that is something has either in itself or outside itself a sufficient reason or ground; so that it becomes intelligible to man gifted with spirit (reason, reason).

Predictability.

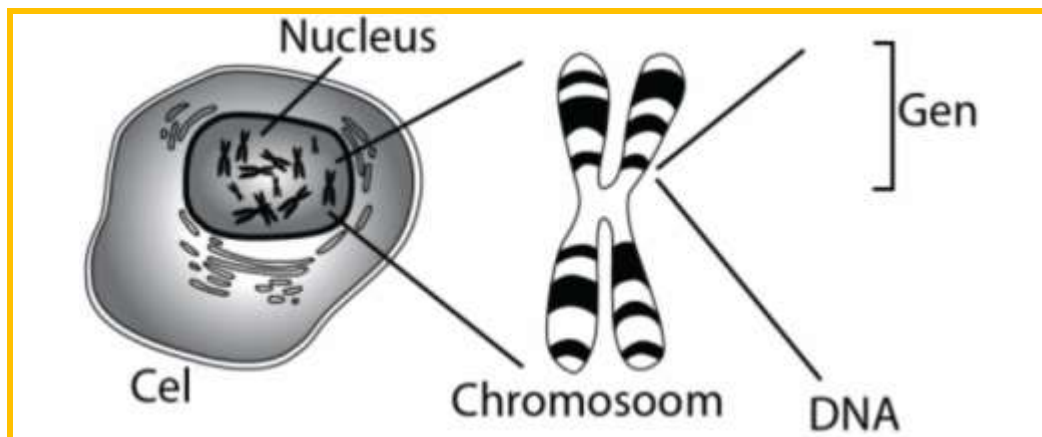
People with conscience respect these axioms. If they are not respected, their behavior is unpredictable. What they cause in themselves and around themselves in our world lacks its inner - intentional - stability (which replaces physical law).

All true morality is the expression of that stability (immutability, intentional lawfulness). Thus e.g. in the Bible the decalogue. Nature and humanity, if subject to its own 'law', are reliable, because causally predictable.

Genetics (some basic concepts).

Genetics (term introduced in 1906 by W. Bateson (1861/1928)) dates back to Greg. Mendel (1822/1884). In 1873, Schneider discovered “threads” in the nucleus of cells during mitosis (cell division).

In 1882, E. Strasburger (1844/1922) and Al. Fleming (1881/1955) that those threads carry the hereditary traits, the so-called “hereditary information”.



DNA.

A biochemical active ingredient (deoxyribonucleic acid) was discovered in 1946 (in the wake of F. Griffith (1928)) by Avery, McLeod and McCarthy. It is located in the chromosome. Each chromosome contains thousands of genes.

Gene(s).

The gene is a fragment of the DNA molecule. It determines the biological (anatomical and physiological e.g.) characteristics of the organism.-- The genome. This is the totality of genes in a chromosome.

Human Genome Project.

Mapping of the human genome began in 1990.--A current projection suggests that eighty thousand (or about) genes and the estimated three billion connections within human DNA will have been mapped by the year 2000.

Not until 2002 would the work or be.

In *Het Volk* (29/06/1999, 35) project leader Fr. Collins (National Human Genome Research Institute, USA) says that the real work only starts then: how all those genes react on each other still has to be decided. Also: whether or not those genes cause diseases, for example. If all this information were to be put on paper in printed form, it would amount to “a volume of a thousand telephone books, each with a thousand pages”.

This on genetics for those who know a little too little about it.

E.O. COGN. 46.

The homosexual attitude: genetic?

The true nature of homosexuality is hotly debated, but what is certain is that it is an attitude: inner aversion to the “other” sex; equally inner attraction to the “own” sex.

Is it genetic?

Bibl. sample; D. Duboule, *Xq28, le retour du gene gay*, (Xq28, the return of the gay gene), in: *Le Temps* (Geneva) 29.06. 1999, 37.- Duboule is prof embryology Université de Genève.

1.-- 1992.-- The review *Science* publishes the hypothesis that Xq28 is a gene that “correlates” with homosexuality.

Note.-- ‘X’ stands for “chromosome (which is only passable through the mother)”; ‘q’ refers to the long arm of the chromosome (which also has a short arm); ‘28’ is the number of a strip of X.

“Finally! Homosexuality had thus been installed as a genetic disease. Introspective experiences were on the stroke unnecessary” (said Denis Duboule).

2.-- 1999.

In April ‘99, *Science* publishes again.-- Any scientific result, if not open to review, does not actually count as “scientific. However, the finding of the American who published the article in ‘92 was open to review.

A Canadian study group examined 52 pairs of gay brothers who, according to *Science* ‘92, were suspected of having inherited Xq28 from their mothers.

However, the analysis of the genetic marks showed that there was no “meaningful correlation” (*note*: mutual interrelationship).

In other words, “Although the brothers are indeed homosexuals, Xq28 is in for nothing” (according to Duboule).

Attitudes such as homosexuality or timidity or even undergoing charm involve - always the embryologist says - very many factors: perhaps genetic; all things environmental (cultural).

The ‘history’ with *Science* exposes the danger of ‘genetizing’ complicated behaviors (immediately attitudes at their heart). Among other things, it gives scientific research a dubious image (image impression). Meanwhile, genetics is more than that: thanks to its experiments, we have gained insight into most real genetic diseases.

E.O. COGN. 47.

The I.Q.: genetic or cultural?

Bibl. sample: A. Jeanblanc, *Q.I. (L'influence de l'environnement)*, ((The influence of the environment), in: *Le Point* (Paris) 06.08.1999, 26.

See law writer says.

1. A work done by the American Academy of Sciences shows that I.Q. is not an immutable genetic fact. If children (4/6) with a weak I.Q. live within a socio-economic environment that pays attention to and encourages them, they can show a marked improvement in cognitive performance.

2. M. Duyme and his colleagues (Inserm: genetic and medical epidemiology) followed 65 families who adopted a child with the following profile:

- a. come from a very culturally backward background;
- b. effects of temporary neglect or mistreatment;
- c. an I.Q. below 85 (where the average for that age is noted as 100).

A subsequent measurement of intellectual ability at the time of adolescence showed an increase in performance. These were all the more pronounced the higher the socioeconomic level of the receiving parents.

Such observations show the direct causality of the environment, viz. as a cultural fact, regarding I.Q. in early childhood. The latter is therefore not only decisive, as some still want to maintain.

Anne Jeanblanc notes very particularly:

a. the backwardness in “time-space acquisitions” - it mentions among other things logical thinking and speed in positioning within space - are most easily caught up;

b. backwardness in language ability is susceptible to catching up to a lesser extent.

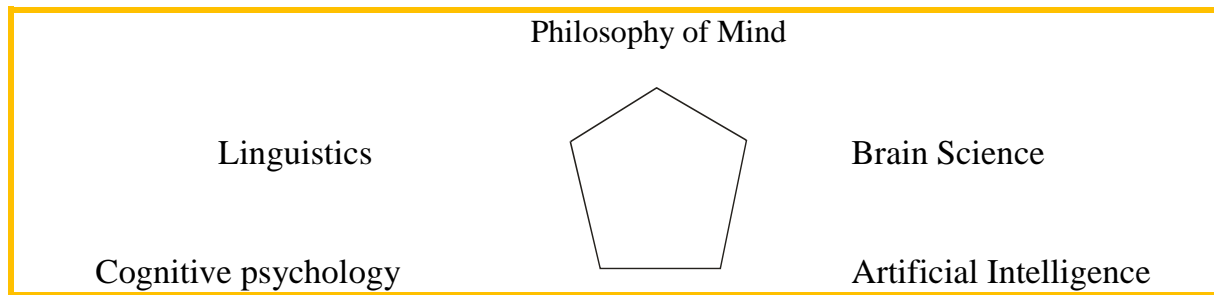
“It is thus feasible: the fate of a child turns into its opposite if it becomes the object of attentive monitoring and if it can count on an educational and material assistance.”

Hence the conclusion: one should not be too quick to say that “it’s all a matter of genes”!

If this is true, then we stand for a counter-movement that pushes the genetizing of human attitudes and behaviors, including in the cognitive realm.

E.O. COGN. 48.

Developmental progress of the cognitive 'sciences': (48/84)



Bibl. sample: J. Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 206;
Above, the pentagon of cognitive subjects (four sciences and one philosophy).

1. 1945/1955.

Main issue: automatic machines and brains.

- a. The computer and immediately computer science got off the ground with J. von Neumann and A. Turing.
- b. Cybernetics (steering science) is founded by Norb. Wiener.
- c. Neurophysiology is developed by W. McCullough.

Note.-- The Macy conferences (1946/1953) in New York bring up systems theory and cybernetics, automata theory and brain science: J. von Neumann, W. McCullough, G. Bateson (anthropologist) are there.

2. 1956/1979.

New cognitive insights.

a. A.I. (artificial intelligence) is brought up at a first seminar at Dartmouth (USA) by its four founders (H.A. Simon, A. Newell, J. McCarthy, M. Minsky). Simon and Newell recite their first program for A.I. there.

b. Linguistics in its generative-transformational form is world-renowned (in a first version) by N. Chomsky in 1957.

c. Cognitive psychology is founded by G. Miller and J. Bruner, psychology profs at Harvard Univ. In 1960 they founded the Harvard Center of Cognitive Studies.

3. 1980+.

The Society for Cognitive Science is founded with its journal *Cognitive Science*. From the Anglo-Saxon countries, cognitivism or cognition spreads worldwide. Research centers, laboratories, education, journals!

Note.-- Dortier does not mention the philosophy of mind.-- Reference should be made to P. Engel, *Introduction à la philosophie de l' esprit*, (Introduction to the philosophy of mind), Paris, 1994. Men like Davidson, Fodor, Dennett and Dretske are at the forefront here. 'Mind' here stands for mental operations and the human capacity for them.... The term has nothing unless indirectly something to do with what we in Europe call immaterial being,--not even with what we have called humanities since W. Dilthey (unless in a radically redesigned sense).

E.O. COGN. 49.

The concept of cognitive science (“cognitivism”).

Bibl. sample: J.Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 197/ 230.-This is a brief overview.

1. Informatics.

Computer science sees in “the higher mental processes” an application of “artificial intelligence” (A.I.). It translates them into an algorithm (series of steps) typical of computers (computationalism). H.A. Simon (1916/2001) in 1956 constructed a general problem solver (G.P.S.), an ordinator that could handle thinking operations (proof of mathematical theorem, chess game and so on) in addition to arithmetic.

2. Psychology.

Psychology reacts against the prevailing (neo-) behaviorism. From 1950 G. Miller and J. Bruner (profs psychology Harvard Univ.) start cognitive psychology which discovers thinking as grasping the given and the asked (“problem solving”) and wants to fathom the “black box” of the inner life among others by questioning pp. (images, concepts, soul states, life attitudes, stereotyped behavior, symbols,-- logical connections).

3. Linguistics.

Man encodes his mental operations in language, including in logistic language.

N.Chomsky, *Syntactic Structures* (1957), with its generative language description and transformational analysis, opens the way out of behaviorist linguistics. He sought in the depths of all factual languages the structures that govern them all. But his formalism encountered paradoxes (meaningless language phenomena).-- Add as a second thrust : the method of machine translation.

4. Brain Sciences

“From the brain to the mind” (so it sounded). Biology with neuroanatomy, neurophysiology, neuroendocrinology neuropsychology makes its appearance. Especially the brain sciences (neurons, neuron networks, brain centers and so on) come to the fore.-- Not to mention genetics that tries to get a grip on the higher operations of mankind with the genes.

5. Philosophy of Mind.

Analytic philosophy shifts from its linguistic concerns to

a. the connection “language/mind (thinking)” and

b. the value of artificial intelligence. She exhibits computationism (H. Simon) and connectionism (W.McCullough (1896/ 1969), neurobiologist: neuron network-works).

E.O. COGN. 50. (NOTE This page does not appear to exist.)

E.O. COGN. 51.

Metacognitive psychology.

Bibl. sample: Anne-Marie Melot, *Métacognition*, in: O. Houdé et al, eds., *Vocabulaire de sciences cognitives*, Paris, 1998, 261/263.

Writer defines: metacognition-cognition of cognition-includes all skills and activities that have the phenomenon of cognition as an object and lend themselves immediately to mastering it (e.g., as an educator).

1970+.

Psychologist John Flavell studied metacognition following intentional memorization in children.

Note.-- The metacognitive sciences also study problem solving and comprehension, social cognition, communicating with others, and persuading others.

An important current studies the “naive or folk psychology” with which we all begin as children. - Especially regarding children, they should get to know the mental phenomena in themselves: memory images, insights, beliefs, ignorance, feelings, wishes, intentions e.g..

Two basic aspects.

According to Flavell, there are two.

A.-- Sustainable metacognitive competence (meta-knowledge).

This is the totality of beliefs stored in long-term memory regarding persons, tasks, ‘strategies’.

1. Persons.-- Cognitivist understanding: human beings insofar as they are “information processing systems”.

2. Tasks.-- Goals to be pursued and information to be acquired.

3. Strategies.-- The ready knowledge regarding how to achieve the stated goal in order to make progress.

B.-- Transient metacognitive experiences.

These are the conscious cognitive and affective experiences following the solution of a problem.

Scenario.

A child reads a text. Suddenly it realizes that it does not understand the text (ignorance). He can change his study strategy accordingly: e.g. by asking for information elsewhere, splitting the text into parts, etc.

Both - A and B - are of course complementary.

Metacognitive Science.

Apart from psychology: artificial intelligence and pedagogy.

Researchers such as Ann Brown, Michael Pressley, Wolfgang Schneider showed that, among other things, the ability to reflect on one’s own knowing life is exercisable.

E.O. COGN. 52.

Model term.

Bibl. sample: 01. Koenig, *Modèle (Neurosciences)*, in: O. Houdé et al., eds., *Vocabulaire de sciences cognitives*, Paris, 1998, 268s..

‘Model’ is the representation of a phenomenon (original).

Cognitive brain science seeks primarily to construct cognitive models.

Now it is the case that in fact e.g. language use or perception are not global and undifferentiated as a process but a super-system of sub-systems each of which, within that totality, takes care of its own processing.

Thus, the elaboration of a model consists first of all in separating those subsystems in their functioning. In other words: the brain science model is those subsystems and their aggregation.

Terms

Even though such a model is a product of the mind, it must be

- a. are biologically plausible and
- b. computationally elaborated. For it must correspond to what we know about the functioning of our brains.

Computational.

The irreducible steps in the processing by the subsystems must correspond to the results of a computational analysis. This is a logistic analysis: it closely follows the different steps within the operation of the subsystems (whether biological or artificial). Only this logistic aspect provides a sufficient description of the model that is ready enough so that the model may be tested in a computerized simulation (imitation).

Note. -- So much for the neuroscience model.

O. Houdé adds that in cognitive psychology, modeling is very closely aligned with neuroscientific methodology. Thus tomography, i.e. images based on functional magnetic resonance (a form of scanning). Similarly, electroencephalography.

D. Kayser talks about models in artificial intelligence in psychology among other things: a mathematical function, an algorithm or just an accessible data serve as models.

Fr. Rastier talks about linguistic models. But these practically amount to some theory (theoretical model). For example, N. Chomsky’s theory of propositions in language.

E.O. COGN. 53.

Computational analysis in neuroscience.

Bibl. sample: O. König, *Analyse computationelle*, (Computational analysis), in: O.Houdé et al., eds., *Vocabulaire de sciences cognitives*, Paris,1998, 42s..

Given a either biological or artificial system to perform suitable tasks. Computational analysis is a logistic analysis of the required properties of such systems.

David Marr, in *Vision (A Computational Investigation into the Human Representation and Processing of Visual Information)*, New York, 1982, is one of the trailblazers.

Orphans.

It is a clear and explicit description of the different steps inherent to information processing.

As far as seeing is concerned: distinguishing the figure (foreground) from the background is one of the insurmountable steps that every system - biological (a human for example) or artificial - must go through if it wants to recognize and identify an object by sight.

Simulation.

Computational analysis is not informational simulation. Nevertheless, the description of the steps within information processing that computational analysis performs is sufficiently explicit to construct an artificial model that simulates human behavior (e.g., seeing an object). This is a key method within the brain sciences.

Method.

This is the application of computational analysis. It is fundamental within brain sciences.

Subsystems.

In particular, this requires dedicating a subsystem, within info-processing, to each step that describes computational analysis.

Such subsystems are pieced together into a coherent totality (“functional architecture”), within which the subsystems exchange information with each other.

Neuronal network.

Such a subsystem can be denoted as a network of neurons that work together in transforming data, data, i.e. ‘input’, into a result (‘output’).

Cognitive psychology, cognitive neuropsychology, neurophysiology, neuro-images (“images of mind”) provide experimental data that “live up” to the model of such a subsystem as a representation of reality.

E.O. COGN. 54.

Outline of a brain science model.

Bibl. sample: A. Jeanblanc, *Les zones cérébrales du désir*, (The brain areas of desire,), in: *Le Point* (Paris) 13.03. 99.

A working group led by S. Stoléru (Inserm U 292) and members of the Center for Medical Studies and Research (o.g., release of positrons (positively charged electrons)) discovered five zones in the brain that function in erotic attitude and behavior as subsystems that make up a neuro-model.

Sample.

Eight young men (21/25), in good health and right-handed, were shown a geography documentary, a humorous scene and a sex film. Each of the films lasted six minutes.

The model.

Five brain activities were found to contribute to erotic permeation. This is: five subsystems.

a. *Attitude.*

1. The area underpinning the seeing responded.
2. The section substantiating phenomena of mind and motivation responded.
3. The third localization was that corresponding to “primary and affective physiological responses” to a sexual stimulus.
4. Then the part of the brain that happens to be involved in the sensation that men live through of the physiological changes associated with sexual desire plays a role.

b. *Behavior.*

An area on which probably the fact that sexual arousal will or will not come to an act shows itself.

With such neuroscientific studies, the researchers hope to better understand disorders of sexual arousal - too little in some, too much in others.

Note.-- Here is a brief, very brief outline of a neuro-model.

Yet this.

(1) The correct reference (“To what precisely does that five-part structure refer?”). Does this fully represent the total phenomenon of “sexual arousal with or without act”? After all, neuroscience approaches living through (mental, intentional experience) indirectly, through the brain systems (metonymic model). Whereas phenomenology attempts to construct a direct (metaphorical) model.

(2) As a sample, the number - eight - is very small and calls for larger numbers.

(3) But the model is clearly open to scrutiny by the foraging community and is scientific in that sense.

E.O. COGN. 55.

Neuro - or brain sciences. (55/63)

According to *J.-Fr. Dortier, Les sciences humaines*, Auxerre, 1998, 213ss., the cognitive sciences emerged around two poles: the ordinator (the computer) and the brain. I.e. from computer science and neuroscience.

The latter are:

a. neuroanatomy, which is the anatomy of the brain (from the cells to the major brain centers);

b. neurophysiology and neurobiology, which addresses the internal functioning of the brain (e.g., how a “message” (information) is transmitted from one cell to another);

c. neuroendocrinology, which has as its object the relations between the nervous system and the hormonal system (e.g., the hypothalamus (under the thalamus) is one of the centers that controls, among other things, body temperature or sexual maturation);-

d. neuropsychology, which accounts for the role of the brain in human behavior (think aphasia, interference with speech, usually caused by brain injuries).

R. Carter, Mapping the Brain (On an Exploration of the Human Brain), Nature and Technology, 1998 (// *Mapping the Mind* (1998)), 10, states what follows.

Human brains consist of very many parts, each with its own role : turning sounds into language (speaking), noticing colors, registering fear, recognizing some object, seeing differences between data.

But this collection of “parts” has not been recorded once and for all:

a. every brain is single;

b. exceptionally sensitive to what is going on in the organism’s environment;

c. in constant change.

The “parts” interact with each other (typical of the system that is the brain).

More to the point, the roles that are played can change. A ‘part’ may not function due to a genetic defect. A ‘part’ may take over the role of another.

As factors one now knows **a.** electrical impulses; **b.** chemical substances; **c.** mysterious ‘fluctuations’. Among other things. Perhaps the ‘parts’ and immediately the whole brain undergo the influence of the universe (defined as time-space).

Conclusion.

“Our brains are probably so complicated that they will succeed in understanding their own workings” one might say. Which the writer doubts.

E.O. COGN. 56.

The brain.

Bibl. sample: J. Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 213/220
(*L'architecture du cerveau et ses niveaux d'organisation*).

1. General overview.

The author distinguishes multiple discs.

a. Neurons.

The number is around one hundred billion. The anatomy (nucleus/ axons/ dendrites, synapses) is known. Information flows through the synapses. Unlike other biological cells, neurons do not renew themselves (except for neurogenesis in the centers for smell and memory according to researchers).

Neuronal network.

a. The genes, the interrelationships of the neurons and the stimuli from the environment determine the structure-in-action'.

b. but the how of this curious dynamic system is "as good as an utter mystery" (o.c., 215)7

Appl. mod.-- The interaction between a few thousand neurons as the underpinning of our comprehension (e.g., concepts such as "kilometer," "grandmother,"-- "freedom" (the latter an abstract concept)) and of our limb control (e.g., eye twitching) is "a total unknown.

Note.-- This radical unfamiliarity of cognitive scientists should perhaps lead them to great caution in the field of mind-psychology and mind-philosophy.

b.1. Neuron groups. The smallest discovered (V.B. Mouncastle after 1970) involve about a hundred neurons (one mm. wide). They are called "columns" or "modules. They underpin mental activities such as orienting oneself or still defining an object by place, shape and color.

b.2. Centers. Thus e.g. the language centers (left hemisphere). So the (pre)-frontal cerebral cortex (cortex) as a center for accountable behavior.

b.3. Halves. Especially since *R.Sperry (Brain Section and mechanisms of Consciousness)* who was awarded the Nobel Prize in Medicine 1981 for this. 2. Parts,-- They are there. But function only after a learning process.

Note.-- An animal, raised in absolute darkness, is blind and after a certain age irreversibly blind.

Conclusion.-- Collective evolution (of all life forms), individual evolution (epigenesis) and cultural evolution together determine the structure of our brains. Thus concludes Dortier.

E.O. COGN. 57.

A sampling of our brain activities.

Bibl. sample: R. Carter, *Mapping the brain*, Nature and Technology, 1998,14.

1. The cell network.

The brain exhibits two types of cells.

a. 9/10 glial cells.

Rather simple structure. Main role: to ensure the orderly coherence of the brain. Perhaps : a role in the electrical processes within the brain (strengthening, synchronizing).

b. 1/10 neurons.

The actual cerebral cells. Designed to exchange electrical signals among themselves.

a/ Thin long specimens with unbranched winding spurs to the body tips.

b/ Star-shaped specimens extending in all directions.

c/ Specimens provided with a highly branched crown,

2. Electrical chain reaction.

Each neuron is connected to at most 10,000 neighboring cells.-- The spurs create contact: axons that conduct impulses from the cell body; dendrites that conduct incoming information.-- Axons and dendrites fit together in synapses (narrow slits).

Each axon releases a neurotransmitter (a chemical) into the synapse cleft such that the electrical signal passes through. This neurotransmitter stimulates the neighboring cell so that it, in turn, emits a signal.

This creates the chain reaction: the millions of interconnected neurons thus live through simultaneous activity.

The influences on our minds

This shows the cognitive aspect. The immeasurable chain-reactive process - involving molecules and cells - controls, at least in part, the life of our minds. Most biological process-based psychiatric therapies are interventions in that process.

Antidepressants (drugs used to treat depression and its symptoms) - such as the notorious Prozac - cause serotonin (a type of neurotransmitter) to elongate in the synapse so that more electrical signals can be exchanged between certain neurons.

Research is underway for drugs against the effects of stroke, dementia, Parkinson's disease.

Note.-- Some researchers cherish the hope of finding in the neuronal network "the secret of human consciousness." Maybe! And if ever an explanation from here comes, at least a partial one; we have brains but are conscious with our minds.

E.O. COGN. 58.

The two hemispheres.

Bibl. sample: R.Carter, *Mapping the brain, Nature and Technology*, 1998, 34vv.
(The great divide).

This is a sample to make you feel how mind, (and philosophy of mind) can also be served with brain research....

1. The brain consists of two halves.

The constant interaction between the two makes it “extraordinarily difficult” to accurately delineate the respective roles of the two. Nevertheless, research shows that the halves master very distinct skills so much so that - under normal conditions - certain skills are always located in one or the other.

2.1. Normal.

They are connected by a bundle of fibers that ensure very accurate information transfer throughout. Yes, the information that flows into one of them is as good as immediately available to the other half. Both reactions are so reciprocal that they substantiate, in the conscious mind, an experience (perception/awareness) of the outside world within the same consciousness.

2.2. Separated.

When separated, they show their own nature more strongly.

Still: if one of them fails at an early stage (the younger the better), then the other half can take over the functioning of the failed one.

Note.-- Which shows that life reorganizes itself to some extent to survive, to cope with ‘life’.

Further explanations.

The left hemisphere is logical, dissecting, exact, happy, time-sensitive. The right hemisphere is sensory, attuned to rather vague totalities and dreamy,--prone to sadnesses of all kinds (fear, sadness, pessimism).

If the left hemisphere fails, e.g., because of a stroke, then, even if the situation is subsequently quite satisfactory, the person affected is gloomy. If the right hemisphere fails, then the afflicted react optimistically to the point of utter indifference,--refusing in extreme cases to deal with the downsides of their condition (e.g., not even noticing their own blindness or paralysis (a.nosognosy)).

Peculiar: truly lived ‘wit’ (humor) requires the two halves. But e.g. orienting ability puts the right half first.

Conclusion: how dependent the functioning of our mental life is on the brain!

E.O. COGN. 59.

Attributable behavior : neurologically based.

Bibl. sample: R.Carter, *Mapping the brain, Nature and Technology*, 1998, 27, 201.

The prefrontal (anterior) cortex (cerebral cortex) is where the biological underpinnings of accountable behavior are located.

Gage.-- According to J. Harlow, *Recovery from the Passage of an Iron Bar through the Head* (1868), Phineas Gage, after a premature explosion of a bursting charge (bar in the head), lost the large portion of the anterior brain. He survived but was no longer the purposeful, hard working railroad worker.

1. Animalistic passionately strong (dangerous for women); through and through transverse in time.

2. Intellectually infantile. Brimming with plans. But erratic and tallowy. Never taking his plans seriously.

In Gage's case, it became medically clear for the first time that insight into one's own behavior and conscientious control of it through free will have a neurological underpinning in the frontal lobes (front part of the brain).

Since Gage, numerous cases have been discovered. Yet his brain injuries remain the most impressive. Most suffer from ordinary - more common - brain injuries such as stroke. There are also quite a few cases of people who, due to brains that never reached full development, never exhibited higher mental activities.

J.P.-- J.P. was a boy with normal I.Q., but in his dealings with fellow human beings he was radically unfeasible: he lied and cheated. He indulged in thefts.

Bar behavior: once he borrowed a glove, "pooped in it" (sic) and gave it right back. Any sportsmanship was unknown to him.

Consequence.-- Several times he was jailed or psychiatrically hospitalized. The psychiatric designations sounded: psychopath, manic, schizophrenic.

Neurologists determined at age twenty that his left frontal lobe was severely shrunken and the right was missing. They followed J.P. until thirty years later: he was then still "without understanding; without any anxiety; unaware of his total present and future life situation."

Conclusion. - Mere blind application of moral axioms without providing 'exceptions' for medically (especially brain science) clear cases is mere axiomatic-deductive reasoning! Such that semantic nonsense is needed to falsify the moral system.

E.O. COGN. 60.

Unisex?

Bibl. sample: R.Carter, *Mapping the brain, Nature and Technology*, 1998, 63vv.

The brain centers that partly determine sexuality are different in men and women due to hormones. Behavioral and environmental models may also play a role. But the thorough model is largely already determined by the genes: they generate typical male and typical female behavior (o.c., 72).

One sees: simple is not.

Typically male and typically female sexuality is underpinned by different portions of the hypothalamus (a group of nuclei (vesicle-like bodies) in the occiput (midbrain)). Under that viewpoint, there is no such thing as unisex.

1. Male.

The medial preoptic area (in the hypothalamus) partly underpins sexual desire for a female partner. From there signals run to the cortex (cerebral cortex) resulting in ongoing arousal and penile erection.-- Assertive type.

2. Female.

The ventromedial nucleus (a group of neurons that also underpins appetite) determines lordosis (offering the sexual organ) partly in a sexual context.-- Submissive type.

Type and severity of sexual behavior are also determined in part in both sexes by the action of adrenaline (adrenal hormone) and testosterone (testicular hormone).

Note.-- The medial preoptic center also captures signals from two nuclei in the tonsil nucleus (in close proximity to the hypothalamus), the corticomедial and the basolateral nucleus both of which are involved in the development of assertive or even aggressive behavior. Which may explain the conflation of sex and aggression in men.

Homosexuality.

Science, the well-known journal, publishes in 1991 an article by S. LeVay (prof biology Univ. Calif.), himself homosexual: the brains of a group of homosexual men who had died of AIDS differ from those of heterosexual men. The nuclei (hypothalamus) are much smaller and approach female nuclei. Later it was also found that the corpus callosum (midbrain) is larger.-- A gene (as it turned out later: D.Hamer) would also play a role.

Behold some neurological view of the sexuality that plays such an extensive role in humans.

E.O. COGN. 61.

“The illusion of free will”.

Bibl. sample: R.Carter, *Mapping the brain, Nature and Technology*, 1998, 180vv..

O.c., 23: “The cortex (cerebral cortex) cingularus anterior (in the upper forehead) is the seat of the ‘I’” O.c., 191: “Consciousness is the product of brain activity, a property of the material world.” As writer herself says: consciousness is not an unsolvable mystery but apparently first of all neurologically-explorable.

Note.-- The self-confident tone seems to insinuate that consciousness, outside of neurology, has never been (finitely) investigated! Which does not prevent o.c., 181 from saying “Answers that are conclusive about the correct relationship “neurology/consciousness” have not yet been found.”

Note.-- Something that should prompt great caution.-- Incidentally Carter’s statements are not very logically coherent.

Appl. mod.

O.c., 191.--”Hysterically paralyzed” are paralyzed somewhere while the organ involved is intact and the connection to the brain unharmed.

A woman hysterically-paralyzed in one of her legs was screened with PET (positron emission tomography) as she fruitlessly tried to move the leg. The scans’ (images) showed the frontal lobe (anterior brain) luminous with each attempt. In other words, the normal automatic domino effect from the will center in the frontal lobe to the premotor cortex that processes the movement appeared interrupted. Her free will did not control that mechanism.-- Up to there a model of dependence of the self as free will on the neurons.--

In passing: is the totality of this paralysis thus completed? In other words: what exactly is thereby proved?

“The illusion of free will”.

Our established moral and also our judicial code (understand: axiomatic) says: “Each one of us possesses an independent mind”. “The mind in the apparatus that controls our actions”. Carter calls this (Cartesian) dualism, because the mind is too independent of the body for her.

She seems to be neglecting

- a. the presence of psychiatrists and neurologists in courts of law and
- b. the fact that e.g. church morality manuals begin by distinguishing “act of a human being” (“actus hominis”) from “human act” (“actus humanus”), since centuries! Freedom of will is not “en bloc” but gradatim for that matter and was not invented to punish people!

E.O. COGN. 62.

Language is more than mere physical sound.

Bibl. sample: Alb. Ducrocq, *L'esprit et la neuroscience (Lumières sur le phénomène de conscience)*, (The mind and neuroscience (Lights on the phenomenon of consciousness), Lattès, 1999.

Ducrocq is a pioneer (including inventor of informatic harnesses (electric typewriters)) of industrial computing. He states:

“The unanimity regarding the need to study the phenomenon of ‘consciousness’ will probably count as the pre-eminent event of the XXth century.” (O.c., 7).

The phenomenon of “consciousness”.

Ducrocq outlines his position: “Without consciousness, we would not even know that we are there. Without consciousness we would not even suspect the existence of an outside world. Of the immeasurable universe, consciousness offers us this fantastic subjective image: an inverted universe, as it were, within which we situate ourselves in the center.” (Ibid.).

Even neuroscience.

We will not go into the vast amount of information on this subject in this work. But nevertheless neurosciences reveal to us “a factor” in the brain that cannot be reduced to natural chemical processes. Ducrocq asks the question of “an immaterial or living principle” active in the brain. However, we quote a text that seems instructive.

Language is not sounds.

O.c., 266ss.-- There Ducrocq speaks of consciousness and automatic actions (what we do repeatedly, we do ‘automatically’ over time) and by extension of “the sounds of a language”.

1. Helsinki.

Led by one Risto Näätänen, Finns listened to Finnish phonemes and also Estonian ones. Within the latter there is a sound ‘ô’ (1311 Hz) that is unknown in Finnish. The brain images revealed that Finns respond differently to ‘ô’.

2. Milan.

Italians - unfamiliar with Japanese - listen to a Japanese text first and then the reverse recording.

Results.

In both cases, the Italians did not understand. But their brain images were not the same.

In other words -- according to Ducrocq -- : it is as if a sequence of sounds affects the brain differently according to whether or not it represents real “meaning” (“information”). -- As he says : language is more than physical sounds.

E.O. COGN. 63.

A hypothesis.

Bibl. sample: J. Eccles, *Comment la conscience controls le cerveau*, Paris, 1997 (or.: *How the Self Controls the Brain*, Berlin/ Heidelberg/ New York, 1994).

Eccles (b. 1903), Nobel Prize in Medicine 1963, is an experimental neurophysiologist. The problem addressed: “If the self controls the brain, how does this correspond to physics?”.

With K. Popper, the epistemologist, Eccles wrote *The Self and Its brain*, Berlin, 1977. Both advocate an interactionist dualism.

1. The I, mind, as of divine origin and immediately immortal, differs thoroughly (according to origin and functioning) from the brain, result of centuries and centuries of biological evolution (dualism).

2. However, both do interact within the unity of man (interactionism).

On K. Popper’s position see R. Puccetti, *Popper and the mind-body problem*, in: Gr. Currie/ Al. Musgrave, eds., *Popper and the Human Sciences*, Dordrecht, 1985, 45/55.

Explanation.

Eccles takes into account the microphysical structures of the nerve cells and the calculations (not without probabilism) of the equally or even more microphysical quantum physics. In other words, it plays in the field of “the infinitely small”.

The interface where the “self” (I, mind) and the brain are active in touch with each other (o.c., 29 and 195), is the human neo-cortex (the prefrontal lobes, at the very front of the brain, which represent a large amount of “gray matter”). There - says Eccles - a modular organization generates a pattern of neural activity such that the self interacts with the brain.

Note.-- Eccles’ exposition, however, is of such a technical nature that we do not cover it here, of course.

Note.-- On 18/19.04.1986 the Higher Institute of Philosophy organized an interdisciplinary symposium on the “mind/body problem”. Eccles with O.Creutzfeldt and J. Szentagothai attended.

Remarkable was that prof Lindenmayer (Utrecht) raised the question whether, if the “soul”, in interaction with the body, could not also interact with other realities (in e.g. paranormal ways).

E.O. COGN. 64.

Primitive and antique-medieval cybernetics. (64/73)

Beginning with the Bible.

H. Peels, *The Vengeance of God (The meaning of the root NQM and the function of the NQM texts in the context of Old Testament God-revelation)*, Zoetermeer, 1992, says that in 59 texts NQM means “restoration of justice after deviation; In 85%, God is the subject of NQM.

In other words: NQM means “judgment of God” (God’s intervention), -something the old catechism still knew in the term “vengeful, understand : law-restoring) sin” (which involved boundary crossing).

Herodotos.

G. Daniëls, *Religious-historical study of Herodotos*, Antw./ Nijmeg., 1946, sets forth what Herodotos of Halikarnassos (-484/-425) called “kuklos” (Lat.: cycle, circuit):

- a. many things (animals, people) start small and grow orderly;
- b. sometimes, however, they reach a state of ‘hubris’, boundary crossing, deviation (disorder);
- c. thereafter follows, in Herodotos’s faithful interpretation, a divine restoration (meaning complete demise if need be) of order.

Aristotle.

O. Willmann noted at the time that in his *Politika* v: 5, speaking of constitutions, Aristotle structures an analogous ‘kuklos’, course, as follows:

- a. ‘telos’, aim(s), purpose, i.e. order;
- b. ‘par.ek.base’, deviation (disorder);
- c. ‘ep.an.orthosis’ (or still : rhuthmosis), restoration (order).

The latter recalls the so often misunderstood “panta rhei” (usually poorly translated by “everything flows”) of Herakleitos of Ephesos (-535/-465), which means, “Everything proceeds according to a kuklos.”

E.W. Beth, *Philosophy of Nature*, Gorinchem, 1948, 35vv, brings up this “order/disorder/reorder”. The cosmic harmony (of opposites: order/disorder/reorder) governed equally the inanimate, the living and the human, yes, also the divine nature. He refers to H.Kelsen, *Die Entstehung des Kausalgesetzes aus dem Vergeltungsprinzip*, in: *Erkenntnis* 8 (1939) who knew that structure.

For ancient Egypt, W.B.Kristensen et al, *Antique and Modern Cosmology*, Amsterdam, 1941, confirms the same structure in an analogous way. In other words, he sees them as the basis of religions throughout the ancient world.

Doesn’t Platon, *Timaios* 32, say “All these things become causes of disease (sanctions) when the blood does not feed from food and drink (order) but gets its ‘weight’ from wrong things (disorder) against the laws of nature”?

E.O. COGN. 65.

Steering Thinking,

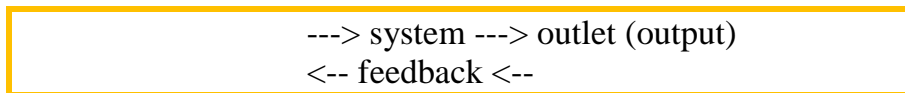
Norbert Wiener.

Wiener (1894/1964) met as a mathematician A. Rosenblueth, neurophysiologist, and his activities under W. Weaver (automatic machines). This leads to Wiener's book, *Cybernetics*, published in Paris in 1948.

Wiener defines steering science as "the theory concerning feedback". In other words, the concept of feedback.

Visual model.

Bibl. sample: D. Ellis/ Fr. Ludwig, *Systems Philosophy*, Englewood Cliffs, N.J., 1962, gives the following diagram: supply (input)



Consider, e.g., a very simple model of "dynamic system: a coffee grinder: the inputs are the whole coffee beans; the outputs are the ground coffee.

Matter/ energy/information.

Ellis/ Ludwig distinguish three types of dynamic systems. The first process (absorb / release) matter (a coffee grinder, a meat grinder), the second process energy (a heating device), the third - and these are of particular interest - process information (converted into material symbols (a computer)).

Feedback

A. Virieux-Reymond, *L' épistemologie*, Paris, 1966, 66s., defines "feedback" as (on its premise) "recurring" cause. Indeed, the "feedback" (feedback) causes, but taking into account the goal. Upon deviation from the goal to be achieved, the feedback cause returns to the premise and restores the deviation. Diagram: -- Goal-oriented: ---> deviant : ---> feedback (restoring)

Self-regulating system,-- A system in which feedback is built in.

J. Piaget, *Le structuralisme*, Paris, 1968.-- Piaget articulates: a cybernetic system is **a.** a totality (system), **b.** provided with self-regulation ('autoreglage') **c.** which controls ('regulates') the transformations ('transformations'). Quasi-closed system.-- That self-regulation presupposes that the system is open, (amenable to supply) but not without more and thus quasi-closed because self-regulating.

Mathematical describability. - Purpose/ deviation/ recovery is an ancient concept.

J. von Neumann, *The nervous system as a computer*, Rotterdam, 1986, xix, says: in addition to general mathematical methods, logical (logistic) and statistical methods are employed in cybernetics.

Self-regulating systems.

L. von Bertalanffy, Robots, Men and Minds, New York, 1967, distinguishes gauges that are partly identical partly non-identical.

1. *Inorganic.*

The 'regulator' ('regulator') is that part of a machine that keeps its gait (functioning) stable: pendulum (clockwork), 'agitation' (watch), governor/ flywheel (steam engine). J.Watt (1736/1819) invented the latter: a signal (information) controlling the stable speed of the steam engine is embedded in the machine.

If the speed deviates for any reason, the machine regulates the speed as self-regulating by means of feedback to the set target speed.

I.e. goal/ deviation/ recovery (feedback).

2. *Organic.*

The feedback, built into life, causes homeostasis if deviation occurs in "le milieu intérieur", the internal state of the organism (Cl.Bernard (1812/1878)), such that internally (not without co-regulation of external influences of course (quasi-closed system)) acidity, water balance, body temperature, whole metabolism and so on remain stable (except for non-life threatening deviations).

In other words: goal/ deviation/ recovery.

3. *Organic.*

Feedback regulates the reflex to external, deviating influences (not without such internal influences). Fr. Magendie (1783/1855; neurologist) defined "reflex" as that activity which is caused by a stimulus (disturbance) and propagates through the posterior or dorsal nervous system and thence is reflected (restored) through the anterior or ventral nerve roots to its starting point (the cause of the disturbance (deviation)). There it weakens the initial disturbance, makes it cease or even turn into its opposite.

In other words: goal/ deviation/ recovery.

4. *Intentional.*

A. Ellis/ E. Sagarin, Nymphomania (A study of the hypersexual woman), Amsterdam, 1965, esp. 208vv., sets forth the ABC - theory of personality.

(A) A setback disturbs the psychological balance of

(B) a subject who is neurotic, i.e. already in a deviant state beforehand, (

(C) such that the behavior comes across as "disturbed.

The feedback is either from (B) himself, the subject with his common sense,(= feedback insight) showing up or from therapists who bring (B) the subject back to "common sense".

E.O. COGN. 67.

Automatic machine/computer.

Do we start from a model, the automatic washing machine, to understand the original, the 'calculator'.

1. *The washing machine.*

In an automatic washing machine we have one type of dynamic system: the washing machine processes matter, the laundry. But it is "informed. And in such a way that an algorithm is at work.

Algorithm.

An algorithm is a complete enumeration. I.e.: a summing. To capture the total scope of a concept - here: handling laundry - in an ordered series of operations; which collectively constitute the essence, the concept content. In other words: it is a definition.

Washing Algorithm.

An algorithm includes an initial operation, a set of intermediate operations, and a final operation. Saying: a set of "instructions" (commands), which define a process.

Sequence.

With a substructure, infrastructure, as the premise :

a. place the clothes to be washed in the drum; turn on the electrical power; put the washing powder in the compartment; open the water supply.

b. Depending on the nature of the laundry, an appropriate program (in the built-in microprocessor - i.e. a chip that is logistically structured and has a memory: if you like: a computer in miniature -) is started: a button is pressed that contains one of the washing programs. The machine carries out this program. The waste water is discharged.

c. The clean laundry is removed from the drum.

2. *The computer.*

There is analogy, i.e. partial identity/partial non-identity, between washing machine and computer.

Similarity.-- The computer works according to the structure alleged just now: input - input - of information (instructions)/processing according to program /output.

Difference.-- The washing machine is to a great extent pre-programmed. The computer is much less pre-programmed: those who use it can to some extent enter a program themselves, i.e. program a given and a requested (task) for solution.

Note.-- One can clearly see the degree difference regarding automation. In any case: logic in the form of logistics especially, is rife in machine, automatic machine and computer.

E.O. COGN. 68.

The computer.

Bibl. sample:

-- P.Heinckiens, *Programming is more than typing*, in: *Eos* 6 (1989), 9 (Sept.), 69/73;

-- E.De Corte/ L.Verschaffel, *Learning to program (Vehicle for skills?)*, in: *Our Alma Mater* 1990: 1 (Feb.), 4/35.

Definition.-- An ordinator is a device that processes - encoded in material symbols - data (data), i.e., information, in the form of an algorithm (set of purposeful operations).

Computer System.

Two larger sections.

1. The computer itself (in front of the keyboard).

2. The background is peripherals.

As a dynamic system, the ordinator exhibits the keyboard as an input machine where the monitor (containing e.g. the screen) and the printer are output machines.-- Diskette.

This is the disk on which the information is stored (the data carrier). Immediately we have memory: the floppy disk as a store of data.

The diskette is input and output unit at the same time. In other words: input, memory, output are the three functions of the diskette.

Equipment/ software.-- Hardware (materiel)/ software (logic).

a. Equipment is the totality of the material components : electromechanical and electronic parts, cables and circuits for electrical power and interconnections;-- a central memory and auxiliary memories;-- input and output organs for the data (information).

b. Software is the totality of programs and associated documentation material (manuals, flowcharts for computer operation).

Both together.

Ph. Davis/ R.Hersh, *L'univers mathématique*, (The mathematical universe), Paris,1982, 365/369 (*Modèles mathématiques, ordinateurs et platonisme*), points out that real informatic 'arithmetic' (computer work) includes both aspects: only if both equipment and software are in perfect order can the computer be expected to produce "the absolute truth."-- The authors emphasizes "which is far from always the case."

This description in brief does not intend to be a computer introduction : it intends to show that the computer is a dynamic system that takes in information, processes it (according to predefined axiomata), and delivers it. It is thus in mid-century terms "a totum physicum movens": a physical entity that moves.

E.O. COGN. 69.

Computational thinking : applied logic.

1.1. Five aspects.

According to Dr. Klingen (Helmholtz-Gymnasium, Bonn), computer science includes five aspects.

1. Understanding how to use the equipment.
- 2.1. Understanding the core of the thought process, the algorithm.
- 2.2. Understanding how to structure information (data).
- 2.3. Understanding how to apply it to concrete cases (applicative models).
3. Understanding how to shield data from intrusion.

1.2. Object/subject.

De Corte/ Verschaffel.-- Learning to program is translating a concept by content and scope into a series of operations.

a. Object.

GG.-- A legal issue, e.g. a murder.-- Do we think of colonials confronted with ‘native’ law.

GV.-- Solving with the computer. To learn the relevant case law (summative induction: sample by sample). Once it is known, program it by summative induction. In other words: to do justice to the totality of the issue - we call this ‘cognition’.

b. Subject.

De Corte/ Verschaffel call this ‘metacognition’. The ‘mind’ of the programmer pictures itself in the algorithm. Those who are biased (obstinate, self-righteous (dogmatising), preferential, as Ch. Peirce calls it) instruct the machine; do wrong to the matter (object). Objectivity - as Peirce says: scientism - adorns. the programming subject.

2.1. Computer terrorism.

J. Ellul, Le bluff technologique, (The technological bluff,), Paris, 1988, says that there is a danger that, if one is ‘moulded’ wholeheartedly into the computer way of thinking, one becomes closed to other forms of thinking

2.2. “It doesn’t have to be programmable all the time.

Prof Weizenbaum, M.I.T., criticizes what was considered a duty at a number of American universities: “Every student his computer”. He strongly wants to avoid that one looks at a learning material exclusively from the axiom: “It must be programmable”. This is what we call “axiomatic induction”: one takes samples in a (total) reality only insofar as these samples are in line with the axiom of programmability.

Note.-- Traditional logic, especially if actualized, can learn much from e.g. cognitivism (logistics among others) but is fundamentally broader in scope.

E.O. COGN. 70.

The essence: of. Programming.

‘Programming’, algorithm, is to depict a task (Given+Asked) in a logically correct sequence of ‘elementary’ (irreducible) - understandable to the type of computer - operations (‘steps’).

“Algorithmic thinking is the hard core of computer science”. (*H.Haers/ H.Jans, Computer science and computers in education*, in: Streven 1984: July, 928/940).

‘Programming’ (algorithm forming) is to begin with pen and paper at the table, before deploying the device, to prepare the programming. This involves defining the task entirely and only the entire task (complete enumeration or classification) in the mind (cognition) by dividing it into steps. This means:

a. summative induction (from each step individually to all steps collectively) in preparation for

b. summative deduction (getting the series of steps after one on paper).

That’s “logically correct.”

Structures.

These are programming modes (actually definitions).

a. Iterative definition.

Monotonous repetition.-- Model: a, a, a, a, ...-- The task (instruction) is repeated.

Appl. mod.-- GV.-- Retrieve a list (= summative induction) of twenty names from the computer’s memory : one presses “enter a name” twenty times.

b. Sequential definition.

Non monotonous sequence.-- Model: first a then b, further c, etc..

Appl. mod.-- Asked.-- Translate coffee into an algorithm.-- Initial act: I go to the coffee machine. Intermediate acts: take the jug; walk to the tap; fill the jug with water. Etc.

Note.-- Here it is clear that one must first know the sequence in virtue of summative induction before programming it logically correctly. c. Selective definition.-- Plurality of choices from which to choose.-- Model: “If GV, then yes; if not, then no; Or vice versa.

Appl. mod.: Pension calculation -- “Does the entitled person belong to one of the categories: labourer, employee, self-employed, yes or no? “Has the beneficiary had a full or incomplete career, yes or no?” (...).

Note. - The computer stands or falls with the completeness of the data, i.e. - we repeat ad nauseam - with summering (preparatory inductive and then programming deductive summering). Only the totality of the data and the requested data guarantee the computer.

E.O. COGN. 71.

Chemistry algorithm.

Bibl. sample: B.Faringa/ R.Kellogg, *Factoring* (Nobel Prize in Chemistry 1990), in: *Nature and Technology* 58 (1990): 12 (Dec.), 832/839.

1.1. Synthesis.

E. Corey (with some twenty collaborators) worked on the “creation” (synthesis) from last elements (often compounds with carbons) - in computer language: bottom up - of gibberellic acid, a complex plant hormone. This is a preliminary phase to the manipulation of biological traits.

1.2. Retor synthesis.

Corey elaborated on the method.

1. Decomposition.-- Complicated structures he laid out down to the indivisible elements. In computer language : top down.

2. Creation.-- He resynthesizes.

Role of the computer.

The LHASA (Logical Heuristics Applied to Synthetic Analysis) is a computer widely used in universities and industrial laboratories (including in drug research).

Note.-- Corey has been applying that method at Harvard Univ. since 1959. Precisely that computational logic on synthesis was one of the main reasons for his 1990 Nobel Prize.

2. Total synthesis.

The creation of natural substances (organic compounds of natural origin) -- starting from simple molecular elements -- is called “total synthesis. The atoms from which a hormone or an antibiotic is combined, their interactions, -- the functional (playing a role) groups in them, the spatial structures play a role in total synthesis....

Algorithmic.

Appl. mod.: Corey thus synthesized ginkgolide-B, a complex compound found in ginkgo biloba (the well-known Chinese tree of life). This was done by step by step a. decomposing (decomposing) into ‘synthones’ (non-decomposable elements) and b. resynthesizing by combining in thirty-seven steps.

One recognizes the structure of retor synthesis outlined abstractly above.

Note.-- So one sees that the algorithmic method, known to all kitchen specialists (their prescriptions are algorithms), is getting an unsuspected application in the (bio)chemical field but not without the computer as a control tool on very complicated algorithms. That is the ‘power’ of it!

E.O. COGN. 72.

An approximate understanding of “connectonism.

Bib. sample: B. Cadet, *Psychologie cognitive*, Paris, 1998, 73/83.

Cognitivism has variants that sometimes come across rather as counter-models. The model building (‘modélisation’) of computationism (computer-oriented model) is quite different from that of connectionism.-- In order not to lose ourselves in hyper-sophisticated details this approach.

The joint grasping of problem situations.

Cadet refers to E. Bonabeau/ G. Theraulaz, *Intelligence collective*, Paris, 1975.

Some animal groups adapt their collective behavior to the changing situations in their environment. but in which it is notable that any “central organism” (whatever that may be) or any “guiding figure” are absent.

1. Clearly, such group responses are “intelligent.

2. But that “intelligence” is clearly “collective” insofar as it is not concentrated in any member of the group or subgroup.

At most, in such communities one finds some “specialization” (concentration of intelligence) in some individuals. Think of the worker and guard bees in a bee’s nest.

The animal “analysis” (grasping) of the situational problem (e.g., a foreign insect invades the nest) along with the “intelligent” responses apparently spring from an information exchange process between the individual (insofar as this term is appropriate here) members.

Final sum.

On closer inspection, it is clear: there is indeed an information-processing process.

The “intelligent”.

The group, i.e. the members-in-interaction, “floats above” (*note:* out of the morass of information details). What in French is called “émergence. The group controls the situation i.e.: Distributive structure.

The group collectively stands or falls with the individuals who each understand the situation (partially or completely?). In other words: the information is spread among the individuals. De-individualized’ however.

Note -- One also calls connectionism “neuromimetic. The group members resemble the neurons that each separately but within a network underpin our perceptions/ sensations or our cognitions.

The author refers to a pioneer: K.S. Lashley (*In Search of the Engram*, in: *Psychological Mechanisms in Animal Behavior*, London, 1950, a text that did not resonate until thirty years later.

E.O. COGN, 73.

Neuronal network.

Since 1960 (especially since 1985), computer scientists (USA, Japan, Switzerland among others) have been experimenting with a new selective type of ordinator.

1. Model.

The human brain consists of neurons and neuronal centers, collectively a neuronal network of about a hundred billion neurons in constant interaction. They process in part what the mind activities to process. If only by substantiating.

2. Original.

Whereas the established computer has a program (microprocessor), the neuron network simulating ordinator does not. In the absence of the classic program, all that remains is a set of elements - artificial neuron simulations - which interact with a sensitivity threshold that is susceptible to change by means of electric currents.

Appl. mod.

One gives to that new type of computer as an instruction "Look up the word cookie in a text". -- The computer reacts somewhat like a human: "If (the more) a word is similar to the one searched for ('cookie'), then (the more) the network gets excited (electrically, of course). Until it falls on 'cookie'.

Proprietary algorithm.

Computer people are used to the algorithms but the typical algorithm of the neuron network has its own selective definition (and comes across as eccentric at first).

Robotics.

'Robot' (Czech) meant 'man of art'. Now it means 'working machine'. Robots that artificially 'look' (at 'cookie' e.g.) or edit words are served with the new type of ordinator.

Man and Machine.

Cedos, Cerveau humain ("Maman, enco un miscui"), (Human brain ("Mom, another cookie")), in: *Journ.d.Geneva* 10.12.1990, has the following caveat to this.-- A "two-year-old baby recognizes in an instant a 'cookie' ('miscui' = 'cookie') that barely shows its edge in the package.

As an aside: so does a dog! - So far, even the most powerful computer doesn't succeed in that. Explanation: A baby (a dog) needs only a minimum of observation data (mind as intentionality). A computer always needs the full observation data because it only has that dose of mind that its makers put in it.

In other words: intentional systems, if need be - thanks to 'flair' - exceed the poor data of perception. With what? With 'spirit' (even a dog has some of that 'flair').

E.O. COON. 74.

Artificial intelligence as demanded. (74 /79)

Bibl. sample: F.Bellotti, Congo prodigieux, Paris, 1956, 81.

Scenario.-- Former Belgian-Congo. A Bakumu comes before the Belgian court after a murder. Dead calm, proud of his killing, he is arraigned: “I was in a state of lawful self-defense”. The judge: “But according to witnesses you started first”. Accused: “But he had two lances with him”. The same answer keeps coming back.

The judge ends this monotonous debate and, believing he is making a fair judgment, says through the interpreter and his Negro-African helpers, “Hanging. The interpreter translates. Attendees, African judges and even accused clearly agree nodding their heads. At the end, however, the interpreter asks the judge, “All agree. Your verdict is just. But how to hang a dead person?”.

The judge postponed the verdict and hastily asked the governor for advice: “But that’s done! To go up to a Bakumu with two lances is to tell him, ‘I have come to kill you (in a duel)’.” Accused was thus in his right. Exonerate him”. So said the governor.

The general concept of “criminal offence” O.c., 82.

1. A code of law, if it is a true system of the agreed rules of law, is the elaboration of the axiom: “To c.a. (criminal act), the general trait of which all criminal acts are recognizable, this and that (singular, private applications) will be recognizable as criminal.” So much for the conceptual content. Now the scope of the concept.

2. To interrogate all connoisseurs (heads, magicians) in such a way that a complete list (inventory) of all possible s.f. emerges is impracticable. For they limit themselves to acting according to customary law (‘tradition’) from case to case.

D. Kayser, Logique, in: *O. Houdé, Vocabulaire de sciences cognitives*, Paris, 1998, 250, formalized logic (logics) is an essential part (instrument) of artificial intelligence (as of other cognitive sciences (linguistics, psychology, philosophy)) and from the Congolese incident one understands the need for a formalized code of law as a kind of evidence machine from which, as a completely machine-like activity, one needs to initiate the algorithm to deduce each case individually. Without traditions.

E.O. COGN. 75,

Norm chomsky's general linguistics.

Bibl. sample: P.Wesly, Noam Chomsky, in: C.Bertels/ E. Petersma ed., *Philosophers of the 20th century*, Assen/ Amsterdam, 1972, 225/235.

In 1957, Mouton, The Hague, published *Syntactic Structures* by Chomsky, professor of M.I.T. since 1955. Later *Aspects of the Theory of Syntax* (1965) appears. Two books. World fame!

Chomsky reacts against the traditional grammars which give a lot of rules but **a.** without any (or at least not much) coherence and **b.** with a lot of exceptions. The syntactic-logic treatment by Chomsky wants to thoroughly remedy precisely that: rules that 'apply' outside any existential context, mathematical rules alike. -- With the proposer we go over the main thing.

Transformational rules.

The sentences - propositions - of a language are variants of the same core or basic sentence.-- An example.

1. Transformation rules.

Take as the core sentence "Thou seest her". The basic sequence can be 'generated' from there ("generative grammar") by transforming ("transformational grammar") as follows. - The derived sentences read e.g. :

(1) "Thou dost not see her" (negation transformation); "Dost thou see her?" (question-transformation); "She is seen by thee" (passivum-transformation);

(2) combinations (conjunctions) as e.g. "Thou and I see her" or "She is not seen by thee".

The syntactic analysis of the core sentence itself.

So far, semantic contents still apply too much. It must become mere "empty shells."

To do this, symbols must be introduced. Thus "sentence" (Z). Rewrite rules are applied to these. Thus "rewrite as" (rule) "nominal phrase + verbal phrase".

Shortened : Z = nom. fr. + verb. fr. Similarly : "rewrite as" (rule) "verbal phrase = verb + nominal phrase".

Thus, the purely syntactic structure ("the empty shells waiting for fillings (semantic contents)") is exposed that we have superficially encountered in the sentence "Thou seest her."

Note.-- Chomsky's strongly 'new' linguistics is not so new in its core rewriting because already Platon is talking about the sentence as 'onoma', Lat.: nomen, usually 'noun', and 'rhema', Lat.: verbum, verb. Which proves that this structure had been somewhat coming through for a long time.

E.O. COGN. 76.

Further analysis.

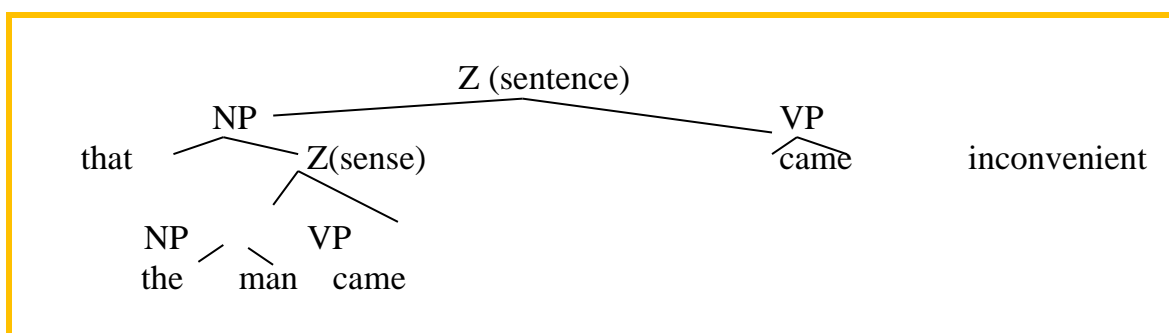
Chomsky further splits.-- N. Chomsky, *A Transformational Approach to Syntax*, in: J.Fodor/ J. Katz, eds., *The Structure of Language (Readings in the Philosophy of Language)*, Englewood Cliffs (N.J.), 1964, 211/245), provides an example.

“Z (sentence) = (is rewritable to) NP (noun phrase; nominal phrase) + VP (verb. phrase: verbal phrase)”. That’s the root structure.

He then dwells on “NP” in the case of “That the man came, came inconveniently”. The constituents (‘constituents’) of NP are: ‘that’ (introduction to a sentence) + ‘the’ (article) + ‘man’ (noun) + ‘came’ (verb)”.

In other words : the subject (NP) is itself a Z (sentence).

The scheme that Chomsky diagrammatically elaborates is what follows.



Note.-- This method is very reminiscent of that of traditional ‘sentence interpretation’ in the Greco-Latin humanities. Only it is syntactic (not semantic),

Chomsky briefly mentions another type: “To err is human”. NP (to err) + VP (is human). His article goes on like this. -- Here we just want to illustrate a thought.

Yet note that he says that if one establishes a sentence with, e.g., as its structure (empty shells) the diagram above, one then knows ‘mechanically’ that we are dealing with a sentence. This shows the purely syntactic and the anticipation of artificial intelligence.

2. Morphophonemic rules.

Once the syntactic structure shows itself, the moment comes when the series of symbols can now be transformed by other rules, the morphophonemic rules. To e.g. “Thou seest her” or “That the man came, came inconveniently”.

Wesly emphasizes: the order of applying these rules is “of the utmost importance.” For example, to get “Do you smoke?”, we must first subject the series of elements “thou + smoking” to the question transformation and only then to the morphophonemic rules: “Thou + smoking = smoking + thou = smokes + thou?”.

E.O. COGN. 77.

Ambiguous sentences.

Take practical examples.

(1) *He hates to beg.*

Can mean, "He hates that people come to beg".-

This structurally gives: "NP + VP = NP + (NP (one) + VP (comes begging)),

(2) *He hates to beg.*

May mean, "He hates having to beg".

Structural: "NP + VP = NP + (NP (he) + VP (must beg))".

Or some more to follow.

(1) I expected Ineke to go. -- In the subordinate sentence, "Ineke" is the subject of "would go". So : "NP + VP = NP + (NP (Ineke) + VP (would go))":

(2) I recommended Ineke to go.-- Here 'Ineke' is first of all cooperating object of "recommended to" and at the same time 'concealed' subject of "would go".

Structural: "NP + VP = NP + (NP (Ineke) + VP (would go))".

Wesly: (1) and (2) differ with respect to "depth structure," i.e., with respect to not-so-obvious structure.

Note.-- All this was daily activity in the Greek-Latin humanities at the time. But without much "structural theory". But with the "common sense" or "popular psychology" so despised by rationalists (and especially logicians) concerning grammatical reasoning. And based on the very traditional grammar.

Depth and surface structure.

For each non-duplicative sentence, there is a depth structure, in which, in virtue of rules of semantics (filling in blanks) capture the meaning of that sentence.

For each sentence there is also a surface structure in which, according to phonological (phonetic) rules (vocabulary), the sounds, the conversion into sounds, are recorded.

Chomsky calls this "the semantic and the phonological component."

But he distinguishes a third component, the syntactic one: it "generates" first the depth structure and then through transformations (question, negation transformations etc.) the surface structure.

In other words: the linked depth and surface structure is there first and this gets a semantic and phonetic interpretation (filling).

The all common language ability - competence - is thus outlined by Chomsky. The practical applications he calls 'performance'.

E.O. COGN. 78.

Language systems that run into inconsistencies.

Linguists sometimes have a hard time : the current spelling shows both “text” and “context(ual)”, both “critical” and “critic”, “electric” and “dialectical”; “clerical” and “radical”. Thus, one can speak of “a radical clerical”.

The question arises, “From what (formal, indeed, formalized) rules (axioms) is that spelling derived?”

Bibl. sample: J. Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 82s.. Noam Chomsky (b. 1928) developed at M.I.T. his *Syntactic Structures* (1957-1).

‘Syntax’ in its language use is a recursive mechanism such that an infinite number of sentences can be formed from a basic pattern.

Thus: “Anneke sells an ice cream” is an ‘instance’ (application) of “empty houses” with the form “Z(in) : “Ond. + US + NS”: The latter exposes a depth structure that surfaces in our everyday sentences.

Infinite wealth.

The basic form of the sentence, a commonplace, is the common place from which all sentences bubble up thanks to permutations (different sentences each time). Thus: “Lisa tormented her sister”. “Jef hit Jan”. That is sentence ‘generation’ (hence the term “transformational-generative grammar”).

Formalism:

Pithy: “working with empty houses that one fills in”. More accurately, “interpret syntactic structures semantically” (by filling in). Dortier notes that Chomsky’s logistic language machine gets bogged down in “semantic nonsense”. -- contradictions, paradoxes.

For example, “An ice cream sells Anneke” is syntactically very correct but semantically ‘nonsense’.

Always Dortier: all improvements of his syntax notwithstanding, Chomsky has not succeeded in eliminating all inconsistencies.

Rule with exceptions.

Semantic nonsense exposes the weaknesses of the axiomatic-deductive system. An axiomatics is a conceptual content that exposes in its derivations the conceptual scope corresponding to it.

Languages are historically (cultural-historically) grown ‘systems’ with very great inner coherence (freedom from contradiction) but reconstructing them rationally-rationalistically is an arduous task. Hegelian put it this way: in the semantic unsentences formal systems show their ‘finitude’.

E.O. COGN. 79.

Text Science (Rhetoric).

Bibl. sample: T.van Dijk, *Text Science (An interdisciplinary introduction)*, Utr. / Antw., 1978.

As the author himself says, o.c., 16, contemporary textual science is a revival of the rhetoric introduced since the ancient Greeks, which represents the communication of a message to a recipient. - But first we turn to a practical chapter.

Scientific article.

O.c., 161vv.-- The author takes a type, i.e. the experimental record.

1. *Observation* (observation).-- E.g., a language user is unable to repeat a text read once,-- a text of five pages.

2. *Hypothesis formation.* Also called “induction” (de Groot).-- An explanation is articulated, e.g., in terms of a general property of information processing in memory.

3. *Deduction of tests.* - From the assumption, one derives a number of predictions (“predictions”) (regarding regularities in language use) in order to test them.

4. *Testing.*-- It is an experiment. In doing so, one pays attention to the subjects, the design of the experiment, the experimental conditions, its execution, the results.

5. *Value judgment* (evaluation).- The result is debated with whether or not to accept the hypothetical statement.

Note.-- See A. de Groot, *Methodology (Foundations of research and thought in the behavioral sciences)*, The Hague, 1961, 29vv. (The cycle of empirical-scientific inquiry).

Text science and cognitive psychology.

O.c. 16v.-- Grammar outlines ideal language use. Psycholinguistics and cognitive psychology pay attention to actual language use. Cf. Chomsky’s competence and performance.

Thus: the well-defined cognitive states and processes in language use, the rules and ‘strategies’ used in the process, how language use can be learned. All this concerning reading texts, drafting texts, estimating texts.

If one wants: input and output.-- How to learn to read texts and how to compose them oneself. All this according to van Dijk in the context of information processing psychology.

E.O. COGN. 80.

The artificial intelligence (a.i.). (80/83)

Bibl. sample: J. Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 220/ 230.

We outline with the author the genesis.

1956.-- Univ. of Dartmouth (USA).-- J. McCarthy, mathematician, hosts a seminar on A.I. (name he invented). Present: H. Simon (Nobelpr. economics) and All. Newell with their Logic Theorist (a program that makes proofs of mathematical theorems possible (the first A.I. program); further: M.Minsky (mathematician) and Cl. Shannon (the founder of information theory).

New design.-- The ordinarators of the time were lightning-fast calculators gifted with an astonishing memory.

A.I. is something else: to mimic human intelligence (with its “strategies” like perceiving, understanding human language, reasoning, tutoring, composing music etc.) as perfectly as possible.

1.-- 1956+.-- Simon and Newell design the General Problem Solver (GPS), McCarthy LISP (still in use). Chess programs emerge.

2.-- 1970+.-- Robotics emerges. Expert systems” are designed (Dendral, Mycin). The first programs on understanding natural languages (Shrdlu (T.Winograd)), Eliza) take shape.

1970.-- Artificial Intelligence publishes its first issue. M.a.: the birth of an organized A.I. operation.

Some basic concepts.-- To specify.

a. Strong/ Weak AI. -- The supporters of strong A.I. want “a lot,” nothing less than the simulation (imitation) of the mechanisms of human intelligence. The others limit their goals to pragmatic domains: practical tasks.

b. Expert system.--This is the name for an informational program that allows
a/ assess a situation (with its unknowns)
b/ such that a rational decision becomes possible. In other words: doing by machine what otherwise an expert does with his ‘mind’.

Thus: one first takes stock of what a physician, following a number of symptoms, determines (= summative induction) and prescribes as therapy; one then inserts that into the “expert system.”

c. Fuzzy logic. L. Zadeh (1960+) introduces the notion of a fuzzy set (an element can belong to a set from 0 to 1 probabilities).

E.O. COGN. 81.

Artificial intelligence and language use.

Bibl. sample: J.-Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 223 ss..

The informational processing of language - think machine translation - creates problems.

a.1. The first machine translation machines - from 1950 onwards - relied on word-for-word translation.-- But that is already creating problems.-- “The girl is walking in the sand” is mechanically easily translated word-for-word: “La fille court dans le sable”. But what happens to “The weather is beautiful”?

Lexicographically, in Dutch, it means “again.

1/ m.: a castrated ram;

2/ v.: repellent (think weer.macht, the power of resistance);

3/ m./o.: callus;

4/ o.: atmospheric;

5/ o.: lands between two ditches;

6/ adverbial: again.

Unless the computer has a semantic network and, in addition, the competence to choose among these six possible meanings, it will commit errors.

The human ‘mind’ grasps (semantic) meanings by understanding including word context, business circumstances, and intersubjective communication interaction. This means that, as Hegel underlined again and again at the time, the human mind does not understand ‘abstractly’ (understand in Hegelian parlance: not without the context).

How can the machine do that? Unless in very restricted domains suitable for computer operations.

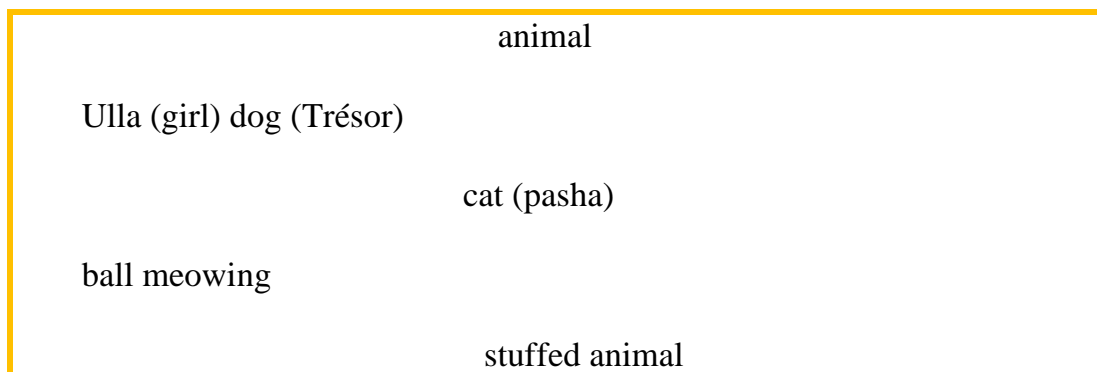
a.2. Meanings of mind.-- If I say “The weather is nice today” with the intention of saying the opposite, how can the mute computer grasp that humor? If I say “The weather is nice today” with the intention of expressing my satisfaction, how can the mindless because mindless computer grasp that?

Note.-- Let the psychologist *Phil. Johnson-Laird* (*The Computer and the Mind*, FontaPress 1988) but claim that “semantic networks are the foundation of most informational theories and of most psychologies of meaning, the strong side of machines is the syntax of symbols but with its consequent weakness regarding semantics.

E.C. COGN. 82.

Semantic Networks.

A.I. has difficulties with language use. In this regard, it is worth briefly elaborating on “semantic networks,” as *J.Fr. Dortier, Les sciences humaines*, Auxerre, 1998, 224, outlines them.



Semantic (referring to real things) networks represent the meanings of a conceptual content insofar as it refers to a collection of data.

The semantic graph above depicts this. The nouns above fill in the ‘labels’ (also: nodes). The interstices give way to relations called ‘links’ (‘links’).

For example, “Ulla loves an animal”. “Trésor is an animal”. “Ulla plays with the ball”. “Pasha is an animal”. “Pasha plays with the ball”. “Pasha is a stuffed animal”. “Trésor doesn’t like the cat”. “The cat meows”. Etc.. This makes up a mini-system.

The schedule.

When one looks at the table of meanings (“insights”), what follows,

1. The possible meanings are quasi- without limits (holistic aspect) in number. In what contexts can the ‘labels’ (nodes) not occur? In what contexts do the relations not fit?

2. Immediately there is “émergence,” the showing up, of new insights. Thus e.g.:

a. **reasoning**: “If Pasha is a cat and cats meow, then Pasha meows”;

b. **new links** “Trésor plays with Ulla”; “Ulla hears the cat meow”.

Connectionists see in such a network a picture of the network of neurons that is our brain. With caveats:

a. the possible relationships quickly force the consideration of a huge number of dates;

b. a subset of relations requires caveats: “The dog doesn’t like the cat” is not a universally valid statement (there are cats that get along with dogs;--which betrays a semantic nonsense, which is in blind faith in the universal sense).

E.O. COGN. 83.

Roger Penrose's views on (the emergence of) (self) consciousness.

R. Penrose, prof of mathematics Univ. Oxford, in a paper "Can a computer ever really understand?" in: R.Carter, *Mapping the brain, Nature and Technology*, 1998, 203, writes what follows.

Comprehension (understanding) and brain.

"There is a specific element in the brain where understanding occurs." He believes: "understanding that includes (self) consciousness".

His reasoning.

Microtubules, extremely fine tubes that are especially widespread in nerve cells, could lead to a "stable quantum state" in brain cells such that throughout the cerebellum (*note*: the cerebellum in the back of the head at the bottom), the activity of brain cells is bundled and "thereby makes consciousness possible."

Note.-- Quantum state.-- This is a reference to Max Planck's quantum theory, articulated around 1900, which fact that energy in the microphysical realm consists of "energy grains," extremely small, separated (as far as possible), energy doses.

The distinction between cause and part of cause.

The concentration, purely biological-cerebral, of brain activity: is it alone and in itself sufficient to create consciousness or is it only a partial cause, indeed only a trigger? It could be that our conscious mind, in order to act within the cosmos, needs a brain (and a whole body) to function but in such a way that it itself does not coincide with that brain (and that whole body) without fail. Penrose does not even ask that question.

Notes.

Penrose believes what follows.

1. The ordinarators created so far do not possess much, if any, capacity for understanding (intelligence). Thus the overwhelming crowd of scientists.

2. The computers or computer-controlled robots to be created in a near future will - according to the opinion of many scientists - possess real intelligence and will therefore be aware of what they are doing.

For Penrose considers 'understanding', also 'artificial intelligence or understanding' non-existent (he thinks first contact with a phenomenon) is "a first step towards the understanding of a phenomenon". In doing so, he speaks as if consciousness is only phenomenological.

E.O. COON. 84.

Compassionate but also causal understanding. (84/104)

J.P. Van Bendeghem, *On the originality of the Wiener Kreis*, in: *The Owl of Minerva* (Ghent) v. 15, n. 3 (1999:spring), 188, writes:

Between logical empiricism (logistic and natural science as a knowledge ideal) and phenomenology (E. Husserl) there are far more affinities than usually thought. He mentions that Kurt Gödel (1906/1978: logician), at home in the limits of formalizing a consistent system, in the latter part of his life bit into the work of Edmund Husserl (1859/1938; founder of phenomenology)

With this as background, we dwell on a possible merger of hermeneutic second-person psychology with, e.g., the natural science approach, -- in the form of detached third-person psychology.

Bibl. sample: K.O. Apel, *Szientistik, Hermeneutik, Ideologiekritik*, in: K.O. Apel et al, *Hermeneutik und Ideologiekritik*, Frankf.a.M., 1971, 39.

Apel argues for the complementarity “Szientistik/ Hermeneutik”.

Scenario. -- A doctor friend is on a house call. Very amicably with and empathetic, he listens to his patient. This is hermeneutics.

But suddenly it becomes clear to him: what his patient says has its cause in a repressed ‘x’. From then on he analyses his patient as the bearer of ‘symptoms’ of which he himself is unaware. That is ‘scientistics’.

Note.-- Someone sees you eagerly. You respond to this without suspicion. Until you find that this person, with all his liking, is loose and tells too much about you, etc.. At that moment you look at this person “objectively distant” and your sympathy fades.

From ‘hermeneutic’ your attitude - your intentionality or mental interiority - becomes ‘scientific’. Apel extends this to e.g. the attitude of a historian towards the time he studies: in spite of all the sympathy he will at a certain moment take a “critical distance” look at that time (society, figure). This does not prevent a certain sympathy from continuing to live on.

Note.-- Cognitivism is the rock-hard science of the inner life,--among other things, of the immediate fellow man, the “neighbor” in Biblical parlance: a little “hermeneutics” (phenomenology) won’t hurt to reconcile “cognitive” and “fellow human”, though!

E.O. COGN. 85.

Cognitive. and information processing psychology.

Let us begin with a very brief sketch of what preceded both psychologies. For they are correctives of existing one-sided psychologies whose results are not denied.

A.1. Naive behaviorism.

The phenomenon of “behavior” (responding, as far as observable and even measurable, to impressions) is reduced (unilaterally) to “impressions (stimuli) automatically followed by responses (responses).

The schedule.

Press (A) -- Black box (B) -- Answer (C)

Psychoreflexology.

I. Pavlov (1849/1936), Nobel Laureate for research on conditioned (conditional) reflexes, noted that stimuli (inciting impressions) such as being presented with food or smelling food or events related to both (the steps of who puts on food) are automatically followed by physiological responses (salivation, gastric juice secretion).

He also identified inhibitory impressions (anti-stimuli).

A.2. Neo-behaviorism.

This introduces “intermediate elements” between A (impression) and C (response). These are: **a.** motivations and motives (D),

b. incentives (the previous reinforcing elements: e.g., the presence of fellow human beings) (K) (Kurt Lewin) ,

c. habits (habitats)” (H) These variables present within the inner life are, in behavioral psychological conception, observed indirectly (e.g., from knowing that someone is starving, one decides on enhanced drive; via equipment).-- One sees that the X (black box; “black box”) is filled.

B.1. Cognitive psychology.

The black box is further completed! In addition to automatic reflexes and intermediate variables, one assumes:

(A) meaningful situation;

(B) rational-rational interpretations, (which appear as complex and involve purposeful behavior (‘intention’));

(C) meaningful behavior...

B.2. Information processing psychology (mind ‘philosophy).

“Study of Mind” (the study of the person as ‘mind’).

Diagram: (A) information of all kinds;

(B) a system of mental processes (especially memory and decision ;

(C) of ‘mind’ (human spirit) response. Those who want to know details about this read e.g. C. Sanders et al., *The cognitive revolution in psychology*, Kampen, 1989.

E.O. COGN. 86.

The dog with a traumatic neurosis.

Bibl. sample: Tr. Braatoy, *From the practice of a psychiatrist*, Utrecht, 1939.

Dr. med. Braatoy was a Norwegian psychiatrist. The excerpt is situated within a chapter on “the traumatic neurosis”, i.e. “the nervous state” following a shocking phenomenon (an accident e.g.).

Schedule.

(A) A harmful situation

(B) makes its mark on the soul

(C) such that the behavior printed goes under (A). - This behavior shows itself when analogous situations actualize the traumatizing shock.

Pavlov’s traumatic-neurotic dog.

The story begins with the “harmful situation.”

1924.-- Petrograd (Leningrad) is ravaged by a severe flood. Pavlov’s laboratory was reached. “There was a violent storm. Rising water masses with waves. Cracking and falling trees.

The test animals swim escorted in small groups from the kennel to the laboratory where they were mixed up. Unusually for dogs placed through them: not a single fight was observed. Not even a scuffle.-- Afterwards, they were led back to the kennel.

(1) Some behaved normally.

(2) Others, however, behaved unusually.... Thus a “strong and healthy dog” in whom the reactions were extremely successful. For example, he reacted in advance to a snoring -- the strongest sound in the experiments -- with the strongest secretions.-- One week after the disaster that dog was placed in the experiment room as he was used to.

1.-- Cognition and information processing.

The animal was extraordinarily restless and all conditional reflexes were practically absent. He who before was very quick to attack food, now would not even touch it. When it was brought in, it even turned its head away. This went on for three days.

Note.-- This shows that in (B), the inner life of the dog, memory had taken hold. The decision not to eat food worked out this memory in his (C) behavior.

2.-- Incentive.

When experimenting, the experimenter now placed himself with the dog inside the room. “On the first trial all reflexes (about ten) were immediately restored. The dog ate eagerly”. If the experimenter was no longer there, this sufficed to reawaken all abnormal behavior.

Note.-- The presence of a familiar worked encouragement (incentive).

E.O. COGN. 87.

3.-- *The strong whirring sound.*

Only after eleven days did they reintroduce the strong humming sound: "All other conditional impressions were processed almost perfectly. But the dog did not eat, was restless, stared at the ground".

4.-- *Incentive.*

One reintroduces the presence of the experimenter: "Gradually and with relapses the dog regains his old forme. He seemed to be completely fine only after a "treatment" of 47 days. Two months after the disaster!

5.-- *New experiment.*

a. To a series of stimuli the hand responds as before, i.e. with marked salivary reaction which, as usual, varies according to the strength of the impressions. In the process, he also eats eagerly.

b. But suddenly, let a stream of water flow noiselessly under the door of the room until a puddle forms near the dog.

Analogue situation.

Quickly the dog jumps up, restlessly he stares at the floor, wants to pull away, breathes heavily.-- When experimenting with impressions he reacts only with increased agitation. He refuses to eat.

Note.-- The (A), the disaster, has left in (B) the inner life of the dog, a memory that makes him react (act of will) in (C).

Comment.

Braatoy, as an experimented psychiatrist, says in this regard, "Animals and men may be exposed to violent impressions which so unbalance them that for a short or long time, remarkably -- via (B) -- they lack the nuanced control of their nervous system. Such a condition is seen in the dogs just after the flood".

"But nervous health - this is how Braatoy expresses undisturbed mental life - will also depend on the relationship between the shocking events and past impressions."

His conclusion.

The dog's reaction at the pee, not so shocking in itself, but recalling the disaster (which is history), is incomprehensible until one knows the "past history" (the disaster).

In other words, past impressions, especially heavy ones, continue to "mark" (in (B)) and express themselves with other reactions in (C).

In that case, (A) is and present and past traumatizing event.

Human caretakers of all kinds apparently do well to keep Pavlov's story in the mind as an informative hypothesis (or axiom even).

E.O. COGN. 88.

The birth of cognitive psychology.

Bibl. sample:

-- J. Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 204;
-- M. Huteau, *Les conceptions cognitives de la personnalité*, (Cognitive conceptions of personality,), Paris, 1985, 193ss. (*Le "new-look" perceptif*).

Dortier pauses for a moment to reflect on what he calls "the famous experience of Jerome Bruner," Professor of Psychology at Harvard Univ. regarding "categorization" (arrangement, i.e., classifying phenomena according to traits within the same comprehensive concept).

Note.-- Immediately it is clear that the Mannheim school, particularly with O. Selz, was already on the same wavelength. Dortier does not hesitate to label Bruner as the father of cognitive psychology.

Early 1950s.

pp. were asked to "categorize" (arrange) cards of different shapes and colors. Bruner thereby experimentally-psychologically discovered the appropriate mental 'strategies' (methods) applied by the test subject in arranging.

Appl. model.

A reference map is entered. Then the test subject search for those maps that exhibit common features as seen from the referral map (reference map). This is called focusing (convergence).

Appl. model.

According to Huteau, one distinguishes

a. formal "determinants" (factors influencing perception/sensing (stimuli with special properties; perceptual and sensory capacities (receptors, transmission mechanisms, centers)), which attracted the attention of researchers until 1940 and

b functional determinants (past experiences, needs, life attitudes, values, feelings), more specific to the personality of the pp.

The latter attracted the attention of the research community from 1940 onwards. Thus Murphy (1942). This view of the personality which already shows itself in observation/sensing is called "new-look".

Scanning is one of the appropriate methods:

1. expectations (for the experiment),
2. the processing of the data,
3. value judgments are scanned as means to fathom the expectations ("hypotheses") of the pp. Cfr J. Bruner/J. Goodman / C.Austin, *The Study of Thinking* (1956).

Needless to say, paying attention to conscious thought processes, typical of cognitivism, was quite different from merely paying attention to the automatic responses to stimuli of behaviorists.

E.O. COGN. 89.

Scanning (scanning) of brain.

Bibl. sample: R.Carter, *Mapping the brain, Nature and Technology*, 1998, 26.-- For those not at all familiar with scanning our bodies, here is an outline of the methods.

1. Single.

MRI.-- Magnetic Resonance Imaging.

Other name: NMR. (scanning by nuclear magnetic resonance). The scanning is done by magnetism in the brain atoms that are bombarded with radio waves. Whereupon the nuclei of the atoms emit radio signals per type of tissue

CT.-- A computerized tomography (cross-sectional) program converts that information (signals) into 3-dimensional anatomical images.

This is applicable to any part of the body. Applied to the brain, this gives a gray brain image but in such a way that each part is clearly visible.

FMRI.-- Functional MRI.

An elaboration of the previous one. The brain areas with the most oxygen are made visible (which reveals the greatest brain activity). The energy required for the neurons to deliver the impulses is supplied by glucose and oxygen via the blood. When an area of the brain is activated, these substances flow there. This is where FMRI makes areas with the most oxygen visible.

Of all the scanning techniques, FMRI gives the best results but it is extremely expensive. Researchers often have to share a device with clinical physicians who need it more.

PET.-- Positron - emission tomography.

An older technique. Similar to FMRI: the brain areas with the most activity become visible in nice, colored images -- but fainter than those of MRI or FMRI.-- Disadvantage: to reach the target, a radioactive marker (mark) is injected.

Note -- Other techniques: NIRS (near infrared spectroscopy), EEG (electroencephalography), MEG (magnetoencephalography).

2. Multiple.

This is then called “multimodal scanning”. More and more common because a combination of two or more of the above techniques. Which of course gives a more complete “picture” of what is at work in the brain.

E.O. COGN. 90.

Placebo.

Bibl. sample: Sandra Blakeslee, *Guérir grâce aux Placebos*, (Healing with Placebos), in: *Le Temps* (Geneva) 16.02.99, 40 (transl. *New York Times Syndicate*).

We dwell on the placebo effect so extensively because it illustrates the causing by “mind,” “mental life” particularly ready.

Scenarii.

Beginning with “stories”. -- Many doctors know the history.

1957.-- M.Wright had been listed by doctors in Long Beach, Cal. as a severe cancer sufferer. With tumors the size of an orange apple, he had a few days to live. However, he learned that scientists had discovered Krebiozen, a horse serum, against cancer.

He begged to have it administered to him. Dr. Philip West, his physician, eventually relented: one Friday afternoon he received the much-desired injection. The following Monday, a grounded doctor found his patient rising from his bed, laughing with the nurses.

His minutes: “The tumors had melted like snow.”

Two months later, Mr. Wright read medical articles that claimed the drug was quack medicine. He immediately resumed. “Surely don’t believe what ye have read in the newspapers.” So said West, who then administered a dose of - what he called - “a new, twice as strong and improved version of the ‘medicine’ “

It was in fact water but the tumors disappeared again. Mr. Wright was beaming with health for two months.

When he read a this time definitive report that stated Krebiozen was “nothing true,” he died two days later.

At University of Tulane (New-Orleans), Dr. Eileen Palace uses a placebo to induce sexual arousal in women who claim not to achieve orgasm. They are connected to a biofeedback device that measures - so they tell her - blood flow to the vagina, sign of real arousal.

Thereupon, one shows her sexual stimuli that cause arousal in most women. However, one deceives these women by releasing for thirty seconds a false biofeedback signal according to which the blood in her vagina has increased. Almost immediately they live through a real arousal.

Note.-- Reread both texts paying attention to the propositional attitudes that are the real cause.

E.O. COGN. 91.

A Japanese study involved thirteen pp. who were allergic to the poisonous sumac. One rubbed their arms with an innocent plant leaf, while claiming it was the poisonous sumac. All thirteen showed rashes where the harmless plant had touched the skin. Only two pp. reacted to the poisonous leaves.

During a recent study, they tested antidepressants. It showed that both placebos and real drugs have practically the same effect. "If thou expectest to be better off, thou shalt feel better."

So says I. Kirsch, psychiatrist Univ. of Connecticut, but his discoveries met with great doubt in the medical community.

On the island of Coche (Venezuela) -- to test the effectiveness of placebos rather than drugs -- asthmatic children were made to inhale vanilla twice daily as well as a dose of respiratory drugs. Later, the pure scent of vanilla increased their breathing 33% more than the drug would have achieved.-- So much for a few stories.

Clues.

How should these facts be interpreted?

I. Medical.

a. Physicians who know Mr. Wright's history dismiss it as "one of those bizarre stories that natural science medicine cannot explain." Indeed, the very notion that a patient(s)' conviction can make a fatal disease go away is bizarre.

b. However, contemporary scientists are beginning to take the power of the placebo effect seriously and are discovering the biological mechanisms that cause the quasi-miraculous effects of the placebo.

Studies continuously confirm the importance of "these lies that heal" (as Anne Harrington, historian of science Harvard University, puts it).

a. As true drugs, they can cause secondary effects (itching, diarrhea, disgust).

b. They can also alter heart rate, blood pressure, digestion, erection, skin quality.

One can deal with these facts this way or that way: neglect them or examine them. Only the latter interpretation is the scientific one.

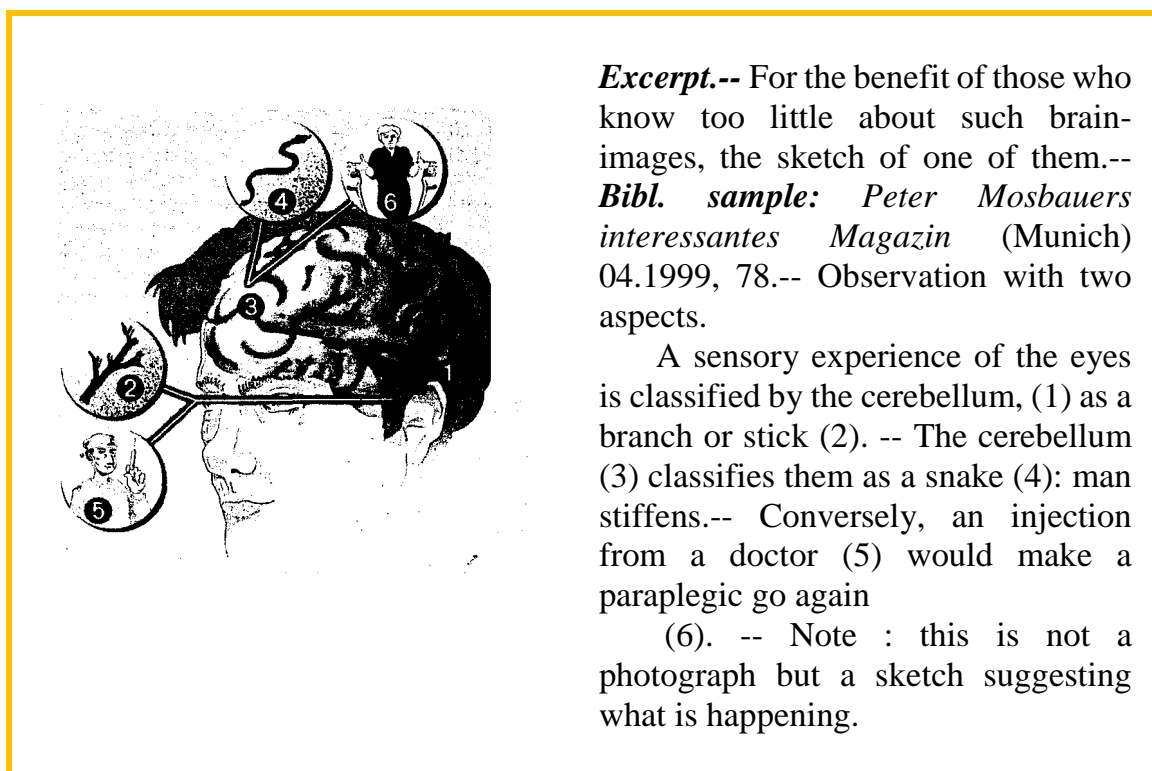
E.O. COGN. 92.

After all, the fact of placebos affects the universality to which the medical sciences lay claim: those who neglect their healing effect are limited to private statements on the subject. Well, science clearly favors universal truths.

Brain images.

Brain images - says always S. Blakeslee - expose a mass of mechanisms that make a thought, a 'belief', a desire cause changes in the structure of cells, of tissues, of organs.

Brain images show that e.g. perception is largely not caused by information from the outside world but by what the brain expects to happen based on previous experiences.



Cognitive neuropsychology.

Such a scenario is beginning to be understood from a new discipline within cognitive neuropsychology, namely anticipation theory. This discipline pays attention to what our brain thinks regarding the immediate future.

(1). Conditioning.

Like the Pavlovian theory - think of the dog that secretes saliva as soon as it hears the bell - anticipation involves a learning process based on association.

According to Irving Kirsch, medical treatments play the role of conditioning stimuli throughout life. Thus, the white clothing of the doctor, the voice of the nurses, the smell of the disinfectant or a syringe acquire a meaning.

E.O. COGN. 93.

As in past learning, these things produce the expectation that symptoms will be alleviated. Indeed, each tablet, capsule or syringe was associated with active ingredients such that afterwards a pill without active ingredient could have a therapeutic effect.

(2). *Anticipation.*

Such conditioning shows how prior observations come about. Yet it does not explain the power and durability of placebo effects.

Such reactions, after all, occur almost instantaneously,--apparently in an unconscious way. Thus they are firmly connected to the brain.

1. *The outside world* is full of ambiguous things so reactive preconceptions are powerful.-- A long and thin something perceived in faint light may be a stick or a snake. But perhaps taking the time to test for it is imprudent. Thus men have developed a mechanism so that they anticipate what will occur, -- mechanism that accelerates perception at the expense of accuracy.

2. The inner world is also full of ambiguous things. Consequence: if one gives someone a product which causes a surge of adrenalin, he interprets this surge as either anger or a feeling of well-being or nothing at all. This is according to what one had told him/her that he/she would feel.

Dr Kirsch: placebos possess 55 to 60% of the efficacy of active drugs against pain such as aspirin or codeine. Incidentally, placebos can also be inhibited by the drug naloxone which also inhibits morphine.

Statements.

1. There was a time when many scientists thought that placebos were capable of “working” by releasing endorphins (*note*: some neurons secrete that active substance; it has an effect similar to that of morphine).

2. According to Kirsch, this is not the only explanation. Because placebos do not always work globally (all over the body) but also very locally.

Note.-- O.i. Kirsch’s explanation as given by Blakeslee is not so clear to those already acquainted with the phenomenon of ‘placebo’. To perhaps it is only an outline.

E.O. COGN. 94.

Note.-- “Declare” can have the following meanings:

a. from pre-given axioms (e.g., those of materialist cognitivism) which, though unproven, are nevertheless presupposed, formulate a set of propositions which at least give the appearance of “explaining” the given. In this, well-formed intellectuals are very knowledgeable.

b. From the given naturally describe the given phenomenologically and, if necessary, cross logically such that the given or phenomenon is better understood.-- The difference between the two types is life-altering.

II. Alternative.

Blakeslee adds a brief note to her speech.

The opponents of alternative medicine argue that the placebo effect is the basis of its results.

When conventional therapies fail to cure chronic or poorly known ailments, there is the acupuncturist, the homeopath, the chiropractor closing the breach with his mighty persuasion system.

“Why not?”

Says Dan Molderman, physician anthropologist Univ. of Michigan in Dearborn. “If only someone who “heals” succeeded in stimulating the immune system of a patient(s). It matters very little whether the healer wears a white doctor’s blouse or walks around with (Native American) plumes on the head.

Note.-- This is pragmatic language, i.e., language that does not favor theory in healing but rather the outcome that saves the suffering of humanity. Molderman, by the way, is an anthropologist, i.e. in the closest temptation to transcend any Western (particularly rationalistic or materialistic) ethnocentrism. So much for Blakeslee’s argument - occasionally interrupted by an ultra-short commentary. It is read just about everywhere.

Note.-- Not a word about the phenomenon of ‘suggestion’. Whoever, e.g., takes up *Charles Baudouin’s* (1890/1963) *Psychologie de la suggestion et de l’ autosuggestion*, (Psychology of suggestion and autosuggestion), Neuchâtel/ Paris, 1924-4 (a book still worth reading) or whoever, e.g., reads *J. Lerède, Qu’ est-ce que la suggestologie?*, (What is suggestology?), Toulouse, 1980, encounters a world of which our Blakeslee does not even give us an inkling. Coincidentally, both writers boast a serious, results-oriented practice. Without much cognitivism.

Here we close with the impression that the cognitive world is nevertheless a very closed world in time.

E.O. COGN. 95.

Mettle knowledge.

Bibl. sample: Annick Weil-Barras et al, *L'homme cognitif*, (The cognitive man,), Paris, 1999-5, 448s. (*La connaissance en acte*), ((Knowledge in action))..

Scenario.

Given.-- Adding 3 together with 6.-- Children actually start from 6 and add 3. Without being able to do it explicitly, they apply “commutativity” concerning numbers in sum.

Asked.-- Is there such a thing as inexpressible yet mettle knowledge? “En acte” reads “metactually.

Children who, before they calculate a sum, are unable to say that $6 + 3$ “equals” $3 + 6$, do not exhibit the same knowledge as the above children.

G. Vergnaud, *L'enfant, la mathématique et la réalité*, (The child, mathematics and reality), Berne, 1981, believes that those children (of the scenario), although they think first of 6 and then of 3 (as numbers to be added), have not acquired the concept of commutativity.

He prefers to speak of “théorème en acte” literally: “proposition with act” or “connaissance en acte” (knowledge with act, metactual knowledge). Children who recognize the equivalence of aggregation by starting from the first given number and of aggregation by starting from the largest number show (insight into) commutativity in act. Nothing more.

Vergnaud showed that practical knowledge can serve as the basis of more than practical knowledge namely explicit knowledge. This becomes the ‘object’ and at once the starting point for the construction of other skills.

Disagreement.

Some psychologists believe that all knowledge of a subject is reducible to explicit knowledge and therefore that a subject who says nothing about it has no knowledge. Knowledge is either explicit or it is not.

Other psychologists believe that in order to understand human behavior, one must presuppose some cognitive invariants that play a role in behavior, even if subjects cannot say anything about them.

Some of these speak of “unconscious cognition” or “the cognitive unconscious”. On the understanding - says A.Weil-Barras - that in this case it is not the unconscious that Freud was talking about.

E.O. COGN. 96.

'Aha experience' (cognitive).

Bibl. sample: B.Cadet, *Psychologie cognitive*, Paris, 1998, 208/210 (*L'insight selon les gestaltistes*), ((Insight according to the gestaltists)).

The author -- not without cognitivist wonderment -- notes that even before cognitivism, psychologists were engaged in the study of problem situations.-- Indeed: gestalt psychologists, following in the footsteps of *Chr. Ehrenfels' Ueber Gestaltqualitäten* (About Gestalt Qualities), (1890), searched for a 'Gestalt' (total solution) in the course of a struggle with a given and a demanded. Cognitives call that gestalt 'insight' (insight, -- here: sudden insight).

Rivalry with gestalt psychologists

Rival of gestalt psychologists, cognitivists design something similar.

Bibl. sample: N.R.Maier, *Reasoning in Human, II (The Solution of a Problem and its Appearance in Consciousness)*, in: *Journ. of Comparative Psy.* 12 (1931): 181/194. What normally appears as something that happens to you, people like Maier try to cause 'experimentally'. See here.

Scenario.

Room. Two cords hanging from the attic.-- The subject should knot them together but they are too far apart so that one spreads one's arms in vain to grasp both. However, there are a bunch of objects in the room: a chair, pegs, sheets of paper, nails, etc..

Solutions.-- Many the test subjects seek in vain to employ the chair.-- The solution.-
- The pegs attached to one of the cords tighten the cord by their weight. One can make the cords oscillate. Meanwhile the test subject with one hand grab the free cord and with the other they grab the other because thanks to the oscillation (moving back and forth) the cords come within reach. They knot them.

Rivalry with gestalt psychologists

Note.-- Mastering natural phenomena is so much on the mind of cognitivists that they want to force an "Aha-Erlebnis" (think of Archimedes in his bath: 'Heurèka' ("I found it") or of Newton watching the apple fall) a.k.a. "analytically," i.e. in calculated stages.

This, while a true insight (as the gestaltists intended it) comes across as such, as a favorable fate. Incidentally, the gestaltists saw insight as an element in "productive," i.e., producing something new the thinking (and not as a form or element of "reproductive" thinking).

E.O. COGN. 97.

“I lost my keys” (cognitivist).

Bibl. sample: J.Fr. Dortier, *Les sciences humaines*, Auxerre, 1998, 299.

The ***Given***.-- “I lost my keys”.

The ***Asked***.-- What ‘strategies’ (search and find methods) are available to me? In other words, what solution methods are available to me?

a.1. I methodically go through each part separately of my whole life domain. This is how I find the keys.

Opm.-- Summative induction.

a.2. I methodically go through every part of my habitat but can’t find the keys.

Conclusion: My summative induction was incomplete: e.g., someone stole them and took them outside of my habitat.

b.1 I search in those places where I “think” they are: my pockets, under the table of my desk, wherever I usually live.

The summative induction then applies only to the probable sites according to my superficial thinking.

b.2. I search in that place where I clearly or not remember having had them on me.

This is then a summative induction of extremely small size: I look for the whole room or e.g. where, according to my recollection (memory), I still definitely had them.

Summering.

Here again, for the umpteenth time, it appears how frequently our cognition operates summatively, i.e. scans entire collections and entire coherences (systems) sample after sample. Which amounts to an algorithm, i.e. a purposeful set of actions.

Cognitivist.

Now we listen to the cognitivism on the subject.

a. The first two methods - ‘strategies’ - are called ‘algorithmic’, i.e. relying on an overall inventory of possibilities. The methods are called ‘infallible’ but burdened with loss of time and energy.

b. The last two methods are called ‘heuristic’, i.e. ‘supported by probabilities’. These are called ‘fallible’ but feasible without loss of time and energy. ‘More effective’ than the previous ones.

According to Dortier, the programs of the A.I. are constructed heuristically. A chess program does not work ‘algorithmically’ but ‘heuristically’: not all possible moves are considered. In other words, the device mimics human cognition. So that method is ‘fallible’ but without loss of time and energy. Like the human being!

E.O. COGN. 98.

Cognitive ergonomics.

Bibl. sample: J.-L. Roulin et al, *Psychologie cognitive*, Rosny, 1998, 420/ 422.

Proponent of this section defines artificial intelligence as “artificial systems” (programs for ordinator) that demonstrate some intelligence or simulate intelligent behavior.

Expert systems are informational programs that demonstrate the intelligent behavior of an expert (geologist, physician, agricultural engineer e.g.).

Cognitive ergonomics.

“Ergonomics” is the name of the profession that adapts the machine and its features to the human being who works with it. “Cognitive ergonomics” is one branch of cognitive psychology that designs informational infrastructure (tools), expert systems, complex workplaces.

When it has to do with the interaction “machine/ man”, cognitive ergonomics applies both its own concepts and those of cognitive psychology. This in order to work out ergonomic border areas.

Scenario.

In aeronautics, for example, the technical reliability of the aircraft is of course extremely important. To most aircraft disasters are due not to technical or mechanical errors but to human error.

Consequence: everything is done to reduce the frequency of human error.

Twofold.

1. One finds out and analyzes its causes.
2. One changes the material conditions that lead to it.

Mastering the dashboard (instrument panel) is an extremely complicated activity and steering is highly automated. In the process, pilots face the difficulty of operating the dashboard correctly and handling what is automatic about it.

Boundary.

“Interface”. An ergonomic interface is an informational system that can be handled with ease by the human interacting with the machine. A psychological study is needed to improve the “pilot/dashboard” interface. The creation of ergonomic dashboards presupposes an accurate knowledge of the reasoning of the pilot in the course of the critical phases of his work.

Therefore, after perception, learning, memory, language use, the textbook covers this in the chapter “reasoning and problem solving.”

E.O. COGN. 99.

Cultural Psychology.

Bibl. sample: Jer. Bruner, ...*Car la culture donne forme à l'esprit (De la révolution cognitive à la psychologie culturelle)*, Chêne-Bourg/Geneva, 1997 (or.: *Acts of Meaning*, Harvard Univ. press, 1991), 146s.

Bruner, at the time a Harvard University psychology professor, founded, with others, cognitive psychology in the early 1950s.

Now he is prof psychology Univ. of New York. In the work mentioned he categorically takes a stand against the biologizing, we say: naturalizing, psychology that what he once helped to found, has now become. In that psychology the ordinator is a model for brains and through brains for all that is intentional (psychic, mental) life. We listen to his overview.

1. *The so-called cognitive revolution.*

Initially - conceived as Bruner did - “the construction of meaning” (*opm.*: the interpretation that ordinary people give to themselves, their fellow humans and the world) was central. - Over time, however, that cognitive revolution faded into a kind of opposite, namely information processing and computation (*note*: computer as paragon). Bruner calls this “my great reproach”.

2. *Folk psychology.*

As psychologists we should take into account popular psychology, an essential characteristic of man as a human being. It is the result of the culture by virtue of which the ordinary person organizes his view of himself, of others and of the world in which he lives.

Bruner emphasizes

Folk psychology” is an essential foundation not only of the meaning that man as an individual gives to what appears in and around him, but also of culture as human coherence. It is precisely in order to give form to our presuppositions and convictions that we found our institutions (*note*: we think for example of everything that is educational) but in its turn “folk psychology” evolves in response to the institutions once they are founded.

As an aside, what is “folk psychology” anyway? She is most certainly a collection of logi(sti)c propositions. But it is more like living stories. It draws on an inexhaustible narrative culture, full of life stories, fairy tales, myths and literary types.

E.O. COGN. 100.

Note -- Narrativism.

O.c., 120, Bruner says: “At the end of the seventies and the beginning of the eighties, the notion of the self, conceived as a narrative being that tells ‘histories’, gets off the ground: the self tells histories that contain a theory concerning the self as one of the components of those histories.”

In other words, according to Bruner, literatology “literary science”-especially concerning narrative cognition-has provoked the rupture within psychology.

By “histories” Bruner - with others - understands first and foremost autobiographical stories: we all tell our lives and listen to what others tell about their lives. We do this incessantly. Cfr o.c., 122.

Note.-- The “I” or person, according to Bruner’s narrativist theory, would only be the one who tells such stories about himself and who listens to such stories from others.

In other words: any ontological definition of the ‘I’ or the person as himself, at the very basis of his histories identically, is called into question. Which is highly debatable.

“A Hasty Portrait”.

O.c., 136/145 Bruner abridges, of course, tells a portrait of the Goodhertz family (George, his wife Rose, the son Carl and so on).

Note.-- One can compare this to the story of “*The Bjorndal Family*” (Trygve Gulbransen) from Scandinavian literature. Indeed: one sympathizes and the mental life of the members of that family is exposed throughout the story.

Note.-- It is known that current Hegelians distinguish not two but three ‘logics’: logics, natural logics, and speculative logics.

Well, according to *G. Bolland, Hegel’s kleine Logik*, (Hegel's little logic), I, Leiden, 1899, e.g. 185, a concept is the inner being of something including its histories. This ‘historicism’ or better ‘mobilism’ (change-sensitive thinking) rises in the background of Bruner’s ‘narrativisme’.

For example, Hegel himself cites the concept of “Julius Caesar”: whoever utters that word (not abstractly life-affirming but at the same time ‘thinking’ the real, living (and now dead) Julius Caesar of history, means, captures the flow of his life-histories with the ‘soul’ (the ‘I’) that ‘shows’ itself uninterrupted in those histories. That is the speculative ‘notion of “Julius Caesar”’.

E.O. COGN. 101.

Note -- Why would human caregivers -- from the simplest helpful to the most specialized specialist -- repeatedly call for an “anamnesis,” i.e., the story of “how the problem(s) got there,” unless in order to get a better view of both the problems and the human being -- the “I” in and behind those problems?

3. Cultural Sense.

The ability to share the same culture with others and to employ its stories, i.e. the sense of culture, shows itself in the fact that young people -- because they have an innate gift and immediately because they are ‘thrown’ into a culture by being born -- come to participate in culture by using its language and its stories in vivo (*i.e.* within the living organism of the culture).

In passing: Bruner hypothesizes that the structure of grammar may well have sprung from a protolinguistic (*note:* representing the run-up to a truly scientific linguistics) sense of all that is stories.

4. The cultural-historical self.

By “constructing meaning” (*op.*: interpreting) people become what they are. Not as isolated selves but by reacting on the basis of their culture, i.e. their history, according to the circumstances which have grown historically, i.e. culturally, and are continuing to grow.

The definition of “cultural psychology”.

Bruner rejects, e.g., neither biology nor economics. But he adds “the mind” (mental life) and everyday existence. Which is, after all, folk psychology.-- In doing so, cultural-historical psychology appeals creatively to the hermeneutic (interpretive, interpretive) method that came into being precisely to study cultural history.

In other words: purely causal (natural scientific) explanations cannot give a final meaning to being human. There is not just one type of ‘explanation’ concerning man and in particular mental life (‘soul’). Apart from physics and biology or economy there is e.g. cultural history.

Note.-- Behold, somewhat explained, Bruner’s overview of his cultural psychology. One senses German influences (Dilthey et al.), among others.

E.O. COGN. 102.

Psychology according to Maine de Biran.

B. Halda, *La pensée de Maine de Biran*, (The thought of Maine de Biran,), Paris/Montreal, 1970, 62, claims that Maine de Biran (1766/1824) practiced a psychology that can be called experimental. "Psychology is indeed a science concerning inner facts of a special kind. Those facts are man's own. They are as old as man. The important thing is to establish them and to formulate them clearly (...). (*Journal intime*, I, 229).-- Let us listen to a few texts.

Bibl. sample: *Maine de Biran, Mémoire sur les perceptions obscures*, (Memoir on obscure perceptions), Paris, 1920. The Biran was a thinker-psychologist but aware of the sciences of his time,--without passively submitting to them.

The Primal Couple.

Thus Biran articulates the essence and of his psychology and of his whole philosophy ("first philosophy"). What he calls "the really very first and original duality" he outlines as follows:

The initial effort ("l' effort primitif") and the inertia of the muscles ("l' inertie musculaire") are the two correlative and essentially inseparable elements: the resistance of the muscles which is the target of the effort is situated within a space in which the self directly perceives the contraction or the movement as a consequence of which it is the cause.

Decisive.

As long as one does not put this duality first, one can utter many propositions about "subject/object," including about their relationship, but in such a way that such a "first philosophy" is without foundation, i.e., "hanging in the air." (O.c., 49).

Note --- It is clear that the Biran understands by inner facts especially "a special kind", namely, the confrontation "will effort/resistance (of body and matter)".

With this he is in the midst of our problems. After all, no neuroscientific assertion can refute this primal experience, namely that we, by wanting, encounter resistances and that we overcome them, at least partially, i.e. that we cause a muscle movement, for example, only by wanting.

The concept of effort, effort, in a fight with the resistance of body and matter, is central and is irrefutable not only as experience but as causation.

E.O. COGN. 103.

“Cum hoc; ergo propter hoc”.

This maxim from natural logic takes care to confuse “coherence” with “causal coherence. Our brains are related to our mental life. But whether they are thereby alone the cause of it as cognitivism suggests to us is something else.

More to the point, the maxim also refers to “total identity” of brain and mental life. This follows even less from the connection, which is incidentally unquestionable.

Empathize.

Cognitivists accuse the mental of being subjective -- well. But one can, under the influence of cognitivist reading and environment and achievements of a technical nature, come to terms with the fact -- if it is a true fact, of course -- that one not only has genes or especially a brain (brains) but is them, as it were, with one’s self. Once so far, what the Biran brilliantly describes and repeatedly repeats and emphasizes, namely, that in the face of resistive data we make an effort with our will that causes and that, when we do not want, does not cause, can be “lived in” as a deceptive impression of a “subjective” nature.

When we see artists empathize with the most improbable things, a light is thereby shed on the empathy of non-artists.

Touching.

O.c., 57,-- The Biran ties in with the perception of all that is hard or resistive as Th. Reid (1710/1796; Scottish commonsensist) points them out.

According to the Biran, Reid distinguishes insufficient touch sensations (cold/hot; rough/soft) from what the Biran describes as follows.

When one directly perceives the effect of a living force that opposes our will, we gain an understanding of that force as opposing our power. Immediately, in that direct perception, we enter into real contact with what is outside of us.

Note -- One sees it: de Biran’s psychology stands or falls with the confrontation “will/resistance”. Instead of R. Descartes’ “I think; therefore I am”, one could say with the Biran, “I will in the form of an effort; therefore is am”. Now if one knows that resistance is primarily the body and matter, then the Biran situates mental - engaging in will - life at the very heart of physical existence in a material world. Far from a “floating in the air” philosophy.

E.O. COGN. 104.

Reflect.

De Biran's thinking is more than mere psychology and his introspection is more than introspection: it is reflective philosophy. Here is how he briefly characterizes it.

If reflecting is limited to what takes place within us without including what takes place outside of us, then that is not the idea 'reflection' .

1. However, if one defines that type of direct observation/sensation as the activation of the ability to exert oneself, then one can define something like true observation/sensation.

2. Furthermore, if one establishes that such perceiving/ sensing is inseparable from the awareness of being an I, then that is the true definition of 'reflecting' .

Attention.

What has just been said shows itself in the way that paying attention to something is brought up.

Attention is a life necessity. Well, paying attention to something usually requires an effort of will. In addition to rushing, absent-mindedness plays tricks on us.

Attentiveness is uninterrupted attention that, in the process, mobilizes all our faculties (experiencing, reflecting). Cfr Halda, o.c., 100.

Well, to reflect in the serious degree is to be essentially attentive and attentively engaged with the will.

The Biran's temperament.

The merely psychic and the strictly moral (conscientious) easily run into each other at the Biran.

As Halda, o.c., 99, says: Fichte said to Reinhold that his temperament explained his philosophizing. Like no other, the Biran realized this truth.

The moral acts on the physical to a certain extent. The will, the emotional life act and react on the life or organic functions (*note*: the biological), at least in so far as these are modified by the soul as cause. Which does not prevent the body from having its own laws which are often opposed to those of the spirit.

The Biran has had to experience this for just about his entire life:

setbacks, injustice, ingratitude, betrayal,--not to mention his fragile temperament (sensitivity, inactivity),--yes, his non-strong constitution have forced the Biran, if he wanted to live up to his conscience and not be inferior to others, to constantly exert himself with his will and with his muscles.

E.O. COGN. 105.

Cognition. (105,113)

Bibl. sample: Fr. S. Rombouts, *Psychology of school subjects*, Tilburg, 1951 154vv.
(Thinking processes in issues).

To make the current concept of cognition accessible, we begin with a simple model. J. Dewey (1859/1952). According to Rombouts, Dewey (*School and Society* (189)), drawing on his pragmatism, describes the thinking process as follows.

1.1. Given: A difficulty (A) together with the first reaction (wavering). Immediately sensing the Asked: “What solution”. (C).

1.2. Given.-- Continuing to confront the difficult phenomenon. ‘Analysis’, i.e. seeking relations within and outside the Given. Until one finds “the knot”. (A).

2.1. Asked. -- On the basis of past experiences (what is ‘history’) (information) (B) and as a result of the ‘analysis one designs a set of difficult solutions as a result of an acquired global understanding, with a view to the best one.(C).

2.2. – Asked. Deduction of inferences from the best solution.(C).

3. Asked. -- Conclusion (If A and B, then C) and execution of deductions.(C).

Immediately following, Rombouts provides an applicative model.

Given. -- Jan gave a fifth of his marbles to his little brother. He kept twenty himself.

Asked. -- How many did Jan have left? According to the proposer, in working out the solution in the spirit of the schoolchild, the concept of the “fifth part” is central. In other words : that is Dewey’s “knot”. Then he sees the following steps (algorithm).

a. The thought process. Round up the knot days relations.

1. Deduction relation.-- The whole sum (summative induction) minus one fifth.

2. Equality relationship.-- Four fifths equals twenty marbles.

3. Partial relationship.--Four fifths of the twenty marbles.

4. Multiplication relationship.-- Five times five.

b. Trial and error.

25 marbles minus 5 = 20.

Syllogistic.

Prephrase 1.-- Every sum is $5/5$. (axiom, summative deduction) This is $5 \times 1/5$.

Prephrase 2. (rule of three) -- Well, $1/5$ is 5 marbles.

Postphrase -- So $5 \times 5 = 25$ marbles.

The whole of the thinking operation seems to us to be computational: the series (algorithm) of steps proves it. Yet there is a holistic moment (2.1. Asked), namely at some point the child reaches a global insight.

Among cognitivists en’ a debate is going on: some see the computer as the model; the others the global insight into the connections of the data.

E.O. COGN. 106.

De Groot : objective research and 'forum'.

Bibl. sample:

-- A.D. de Groot, *Methodology (Foundations of research and thought in the behavioral sciences)*, 1961-1;

-- P. Wouters, *Predicting*, in: *Nature and Technology* 60 (1992): 9 (Sept.), 710/716.
Prof de Groot is well known for his bipartisan view of "scientific truth".

1. *The cycle of empirical-scientific inquiry.*

Methodology 29/31.-- The method, copied from physics (beta sciences), involves as GG observation and as GV 'induction' (hypothesis formation), deduction of testable derivations, tests and value judgments.

2. *The (gamma) scientific 'forum'.*

Methodology 27/28. - 'Forum' in Rome was once the marketplace of popular meetings. Now it means "meeting at which experts present topics to provoke discussion about them."

De Groot: the research results (cycle) are discussed and tested by experts in the field. These make up - as in the beta sciences (physics first and foremost) - a forum that is not infallible but that is capable of correcting errors over time.

Above all, that group, the research community, somewhat like a church council, should be the possessor of the basic knowledge on which all experts agree with general agreement.

For the behavioral sciences (psychology e.g.), de Groot doesn't see that as an option.

Behold the two main conditions of real scientific progress concerning "scientific truth."

A kind of contradiction.

Wouters.-- The merging of **a.** the strict emphasis on "rationality" (understand : the empirical cycle) and **b.** the decisive role of the forum amounts to making "two opposite worlds" one.

De Groot himself refers to this as "his pragmatic solution."

Paradox.

Since de Groot's forum theory is not accepted except sporadically and also since the evidence, on gamma sciences (which want to be alpha sciences with beta scientific methods), that forum theory actually guarantees more progress than other epistemologies has not been provided, forum theory itself is not "scientifically true."

E.O. COGN. 107.

While - says de Groot - in physics from the empirical cycle of investigations only “scientific truth” emerges in virtue of the forum, each individual and each group (school) talks one beside the other.

Significant definitions.

Here de Groot joins the signification that, starting from Lady Welby, emerged around 1900. He particularly favors the significant concept analysis of G. Mannoury (1867/1956). I.e. human science (psychological, sociological, culturological) research on human means of understanding.

The gamma-scientists talk past each other, among other things, because they use completely different definitions of key concepts (axiomatic concepts).-- With the term ‘fear’, for example, the behaviorist thinks of externally perceptible (and even measurable) behavior that betrays something experienced internally via traits that are perceptible and measurable. The Freudian psychoanalyst thinks of ‘fear’ as conscious emotions which he tries to experience (‘understand’) in order to trace possible unconscious and subconscious factors.

Both harbor different, only analogous and not totally identical definitions.

Proposal.

From a significant point of view - creating understanding - de Groot suggests using everyday language as a starting point.... Thus, the dictionary that provides the everyday definitions can provide the ‘agreement definitions’. As a basis serving all gamma scientists.

Then the various individual researchers and the schools can nominate their own definitions. On that common understanding background.-- In any case, only then can they really make forum and discuss.

“Which is not happening now”.

Thus de Groot word for word.-- One sees that de Groot still lives from his contacts with the signification movement which he, before the Second World War, got to know at the International School for Philosophy in Amersfoort (now Leusden).

On his forum theory (significant understanding) emphasized since 1971, de Groot has “not had a single positive response.”

Note.-- In the context of the formal-logical theory of definition, de Groot’s attitude is perfectly justified. Immediately he actualizes the dialogical induction, peculiar to Socrates and Platon.

E.O. COGN. 108.

A.d. De Groot on cognition,

Bibl. sample: P. Wouters, *Predicting*, in: *Nature and Technology* 60 (1992): 9 (Sept.), 710/ 716.

On the one hand, De Groot is in favor of empirically testable science (graphology and mere “empathy” psychology he dismisses each in its own way). On the other hand, he considers limitation of psychology to measurable behavior without theories of consciousness “misguided imitation of physics.”

The method of thinking aloud.

We know what “thinking out loud” is. By speaking aloud, the inner thought process becomes a public phenomenon amenable to empirical investigation.

This method is the theme of de Groot’s dissertation, *Thinking the Chess Player* (1946). He himself was an experienced chess player. From 1936 he investigated his own thinking in chess. From 1938 he investigated experimentally (with test subjects) chess as a thinking process.

He found a whole series of theories (including that theory which interpreted chess as merely a kind of arithmetic) to be “unreal. For years he experimented.

Otto Selz.

In 1942 he discovered *O.Selz*, known for his “difficult books” (*Ueber die Gesetze des geordneten Denkverlaufs* (1913); *Die Gesetze der produktiven and reproduktiven Geistestätigkeit*), (On the Laws of the Ordered Course of Thought (1913); The Laws of Productive and Reproductive Mental Activity). With suspicion he began the lecture (in passing : Selz fled to the Netherlands after Hitler’s rise to power (1933)). But de Groot soon became a great admirer of Selz’s method. By adapting his theory de Groot was able to distinguish phases in the cognitive process.

1. Inexperienced chess players think correctly but due to lack of experience - the exercises in chess - they lose a lot of time. Experienced chess players immediately see the decisive moves. The shortening stands out.

2. Advancing Depth. -- A set of possible moves is evaluated by thinking just one move further. The best probabilities are then calculated to “prove” the best possible one with even deeper analysis.

In other words, unlike many computer programs (computationalism), not every move is dissected equally deeply. Experience - practice - makes intuitive choice possible (without having to go through the whole algorithm). This is one of the main differences between the human and the machine chess player.

E.O. COGN. 109.

Otto Selz : Thinking psychological method.

Bibl. sample:

-- B.Palland et al, *Leerboek der psychologie*, (Textbook of Psychology,), Groningen/ Djakarta, 1954, 371/396;

-- P.Lindworsky, *Experimental soul science*, Antwerp, 1935-5;

-- Fr. Z.Rombouts, *General psychology*, Tilburg, 1957-2, 129/ 133.

One calls the Würzburger, Cologne, Mannheimer, and Amsterdam streak, in which Otto Selz is situated, “the psychology of non-attentive consciousness.”

‘Non-sensible’ means ‘non-sensible-insensible! For the phenomenologists since Husserl speak of a purely intellectual contemplation.

The method is ‘cognitive’ in the sense that although it proceeds introspectively and retrospectively, it has made this method experimental. Object par excellence: thinking and willing as the higher phenomena of consciousness.

The method.

The core is the “GG/ GV” pairing. Psychologically trained pp. are presented with stimulus words (GG) with the task (GV) of responding to them with distributive and/or collective notions.

Thus, e.g.: **a.** assignment: the whole; **b.** incentive word: a branch. -

Note -- The answer with declaration of reaction time (which turned out to be of lesser significance). Here is, the answer: a tree, e.g.. Or still: **a.** assignment: the collection; **b.** stimulus word: a tiger. Answer: a predator.

One sees that similarity and coherence are decisive.

Then followed a communication, in which the pp. described briefly or at length his inner experience immediately after observing the task. The emphasis was on whether individual or schematic representations of a non-abstract nature had played a role in finding the answer.

Note -- The stimulus word as a phenomenon and the assignment as a requested response were written on separate sheets with the typewriter. At the beginning, the sheets were covered with a cardboard of equal size whose center was fixed by the pp.

After a warning signal, the test leader with the word “now” pulled away the covering cardboard while simultaneously initiating the “stopwatch” (stopwatch that does not emit a ticking sound) with the other hand,-- so as not to make the pp. unnecessarily nervous by the ticking : the pp. was exhorted to “take time” to think. It did not come down to speed but to thinking.

E.O. COGN. 110.

Appl. mod.-- “By ‘productive thinking’ we mean (...) ‘thinking in the service of certain tasks; which is essentially an act of will.’” (*J.Lindworsky, Experimental Soul Science*, Antwerp, 1935-5, 280). Cf. *O.Selz, Zur Psychologie des produktiven Denkens und des Irrtums* (On the psychology of productive thinking and error), (1922).

In other words: thinking in the true sense is purposeful. Following (A) a GG, a stimulus word, a task is expected via (B), the thinking faculty, (C). There is no question of blind working ‘association’ and ‘reproduction’ (except in lower thinking responses).

Assignment: entire.

Stimulus word: glowstick.

Communication: “As soon as I had read the stimulus word, which I understood without paying much attention to its meaning, the word ‘lamp’ was already there. - Immediately afterwards I saw some vivid fragments of a lamp to which I tested whether the solution was correct. That test consisted of seeing a mantle in the lamp. The image was only very fragmentary and only appeared after the solution.-- Then I reacted”.

Note.-- Thus, the sense-perception (image) “mantle-in-lamp”, after thinking had found the task, had the role of verification. The generalization was “seen” afterwards.

A. Willwoll, a student of K. Bühler, the child psychologist, noted that “sensory images” also inhibit the thought process.

Assignment: collection.

Stimulus words: landing area, staircase landing....

Communication: “At first I had the impression that it was difficult to start something with these words. Then it struck me that there had to be something in common. At the same time I had a clearly defined image of a landing place with people disembarking and a staircase with no persons on it. I constantly had the image of a movement in front of me and I thought that I could only look for and find the both encompassing concept in that direction. Throughout the course, images of the landing of a ship in which I myself had landed surfaced. They were as vivid as in a painting so that I clung to them throughout the course. (...). The visual moment was so strong that I had to tear myself away from it by force in order to come to an understanding.

Note -- The subject was a writer, used to seeing everything in images: “I don’t like to analyze my images but rather let them work on me as a whole,” said the lady. This shows that image-bound people -- children, for example -- can be hampered in their thinking process and lose sight of the GG and immediately let go of the GV. Willwoll: “The image, if and only if it is put in the service of the GV beforehand, becomes an aid to thinking.” What Selz had always emphasized.

E.O. COGN. 111.

The human mind. And its brain.

Bibl. sample: B.Palland et al, *Leerboek der psychologie*, Groningen/ Djakarta, 1954-5, 375v..

It is known that especially the brain is partly responsible for the functioning of thinking. One establishes this after brain operations on not too old patients.-- Frohn (Würzburg School) examined 12-14-year-old deaf-mute children on their thinking abilities.

1. *Storyline.*

“Hansel”-- Hansel put father’s hat on his head and took father’s walking stick in his hand, “Farewell, mother! I am going far far away now” (said Hansel).

Reproductive response.

For example, “Father’s hat was long. Father’s hat weighed on the head. The storm, air, father’s hat gone. Father’s hat was dirty. Hansel wiped father’s hat”.

One sees: such children are not business. The phenomenon does not penetrate unless as an occasion for fantasizing. They react with representations (images) of a sensory - visual nature. Not with (abstract) concepts.

2. *Stimulus word.*-- Two methods.

a. *Series formation.*-- Stimulus word: butterfly.

Answer: “The butterfly is flying around. The butterfly is sitting on the flower. The butterfly has four legs. The butterfly has two wings”.

There is more than singular images (the butterfly). A vague-general scheme (not yet abstract concept) dominates the answer. Law already indicates a sense of coherence.

b. *Free combination.*

Stimulus word: church.

Answer: “The boy walked into the church. The boy talked about the boy”. There is no coherence here. The phenomenon of “church” presented hardly penetrates.

3. *Five words.* -- Stimulus words: thief, ladder, window, money, clock.

Answer, “The thief stole a lot of eggs and money. The roofer puts the ladder on the roof. The roofer wants to repair the roof because it has a gap. Mother polishes the windows. The windows are clean. The man is working in the factory. (,,...). The children read the words, and one sees what they pulled out of their ‘tubes’! The coherence of the words almost escaped us. Only loose images of memories come loose.

Note -- Deaf-mute children, if treated methodically (one teaches them to pay attention to similarity and coherence), grow by leaps and bounds. Palland refers to *Dr. A.Nanninga-Boon, Het denken van het doofstomme kind* (The thinking of the deaf and dumb child), Groningen, 1934,--work that deals with the woman’s four-year-old son.

E.O. COGN. 112.

The human mind as I.

Bibl. sample: B

-- Palland et al, *Leerboek der psychologie*, Groningen/ Djakarta, 1954-5, 373v.;

-- S.Rombouts, *General psychology*, Tilburg, 1957- 2;

-- J. Lindworsky, *Experimental Soul Science*, Antwerp, 1935-5, 302/305.

Osw. Külpe (Würzburg School).

Külpe (+1915) experimentally investigated higher consciousness phenomena through thinking aloud. (A) A thinking task (e.g., “part of,” “copy of”) is presented as a stimulus to (B) a well-trained singular representations and vaguely schematic representations of abstract concepts distinguishing pp. who (C) immediately after completing the task, reports on the lived consciousness phenomena (especially the triad “singular/ private/ universal” consciousness contents)...

1912.-- O. Külpe delivers a lecture, “*Ueber die moderne Psychologie des Denkens*”, (On the Modern Psychology of Thought."). -- See here how he situates the self as an active-thinking subject.

a.1 *Non-sensory consciousness contents.*

There are, of course, in the foreground of our conscious life, individual impressions (“pictorial” images or representations): e.g., when the test subject thinks of a “part of” a tree, he imaginatively sees the tree at his own house in bloom or he vaguely remembers a diagram of “the tree” in a botany textbook.

But - and Külpe underlined this - there are in our mind “unrevealing” (meaning: not sense-perceiving) contents of consciousness, because our mind “sees” (intellectual contemplation) connections of resemblance and of coherence without there being any sense images or vague schemes. The sensory contents play at most a subordinate role.

a.2. *Troubleshooting diagram.*

Thinking is lived through by the test subject as grasping a task (Given and Asked): the stimulus is not merely itself; it is stimulus to active ordering of data; it is task, assignment. No mere reproduction of what is.

No mere blind association of e.g. mere representations of a sensory-visual nature: the connections of resemblance and coherence are sensory-insensitive. But our minds as minds “do see them”. In what phenomenologists call “intellectual contemplation or insight”.

E.O. COGN. 113.

b. *Our mind as I.*

The responses to the thought stimuli are lived through by the pp. as deeds, actions, of an active I, i.e. the person they are gifted with self-consciousness.

Note.-- The test subject, precisely because they are introspective (understand: by paying attention to themselves while thinking answers (reflective)), experience themselves as the own witnesses of their activities.

Reception.

The reception shows it: the Cologne school (Lindworsky, Frohn), the Mannheim school (especially O.Selz (first in Bonn then in Mannheim)), the Amsterdam school (Kohnstamm) further elaborated this achievement, which finally conceives 'I' as 'person'.

Lindworsky on the self.

This distinguishes at least three contexts of the term "I" in language use.

1. "My name is Anke Sorgeloos. I live in Leiden. I ...".

Lindworsky refers to that verbiage as "social," The Identity Card!

2. "I am a people person: I love cocooning. At night with my husband and my children. Cozy".

That's the 'personality language use! 'I' as far as a set of traits including cocooning.

3. "I think the whole thing that goes with 'branch' is the tree. That's 'pure' me. Thus Lindworsky. He means - he says - the subject of psychic deeds.

Note.-- One would better speak of "thinking" I.

Opm.-- G. Bolland, Hrsg., *G.A. Gabler's Kritik des Bewusstseins*, Leiden, 1901, 56 (*Anmerkung*).

Bolland distinguishes "the pure self" in Hegelian language. He defines:

a. every natural and concrete 'I' - I, thou, she, he -- involves many different contents of consciousness;

b. to arrive at the abstract 'pure' I "I only have to say (of myself) 'I' but in such a way that I leave out (abstract from) all contents."

In other words: thinking must also fall away!

Lindworsky,-- The author characterizes "I" as the global subject who is moreover also characterized by identity throughout the acts and phases of life.-- He specifies: our I-experiences are manifold! I dream. I was hypnotized once. While I sleep. I am going through an identity crisis.

I once suffered from incipient depersonalization. Psychiatrically admitted and cared for, they said I exhibited "more than one personality."

In other words, language that includes "I" is fodder for many discussions about "the" I.

E.O. COGN. 114.

Return to the full reality of our mind. (144, 130).

Bibl. sample: *Edw. Pols, Mind Regained*, Ithaca (N.Y.)/ London, 1998.

The work starts from the disregard of the full reality of our minds.

Two main causes.-- The author sees it as follows.

1. Philosophical fallacy.

Especially since Descartes, the view prevails that our mind does not know (and act upon) reality directly.

Note.-- Typical modern nominalism holds that our mind first of all knows not reality as it is given, but its own, inner products of knowledge and thought (“contents”). The outer world, for example, is only given indirectly.

By the way, The author has published a work, *Radical Realism. (Direct Knowing in Science and Philosophy)*, Ithaca (N.Y.), 1992, which attests to his realism.

He thereby actualizes -- explicitly to the contrary -- Platon and Aristotle,-- in a “first philosophy” (practically metaphysics), as Aristotle calls it.

2. Misconception of causality.

Modernity reduces causality to mere physical causality.

The natural sciences and particularly cognitivism employ a reconstruction that fits their perspective. Originally, however, full causation is more than that reconstruction.

Pols fully recognizes the value of cognitive sciences (the neurosciences e.g.). And this is as an achievement of the human mind! Precisely in that achievement one finds the opportunity to lose sight of the causal effect of our mind on ourselves and the world! One-sidedly paying attention to the products of that causality.

The mean mind.

Convinced of the cognitive achievements, Pols deliberately exceeds the pre-scientific stage in popular understanding.

But convinced also of what constitutes the full wealth of that same mind, he considers it a necessity to integrate the insights present there into the full knowledge of our mind of itself. After all, although our mind is partly determined by the brain as a substructure, it is causally active “at the top” (and not as a product from below) of a universe which knows both physical and non-physical causes.

E.O. COGN. 115.

“I think but not my brain.

Bibl. sample: M.Hunyadi, *Mon cerveau ne pense pas (Défi aux neurosciences)*, (My brain does not think (Challenge to neuroscience), in: *Le Temps* (Geneva) 18.04.98.

On the basis of the book *Jean-Pierre Changeux/ Paul Ricoeur, Ce qui nous fait penser (La nature et le règle)*, (What makes us think (Nature and rule)). Hunyadi is not mellow: neuroscience seems indifferent to what is going on outside it (e.g., in philosophy). They totally appropriate the explanation of the human mind because they analyze the brain. They therefore believe that as far as all that is psychic phenomena is concerned, they have the last word.

Unyielding.

a. Against that closedness of neuroscience, the real dialogue of the book or starkly, though there is the gap.

b. But in the face of Changeux’s radically reductionist position, Ricoeur is unyielding. He distinguishes very strongly the neuronal (neural) from the psychic. The part of the brain workings is not that which is the part of the survival (“le vécu”).

In other words, far from denying the biological, Ricoeur assumes it with the neuroscientists, but he has a keen eye for the irreducible (the irreducible to physics, chemistry, and biology) of our inner permeations.

Pithily put, “If I better know the functioning of my brain, I thereby already better know myself”?

‘Body’.

Ricoeur: neurology describes the body only insofar as the natural sciences understand something of it. They do not understand the body as it is lived through in the psychic life.

‘Life’.

Life as far as the biologist knows it does not simply coincide with life as we live it through: for example, a violent movement of neurons is not yet the same as the intoxication of a crush. For the brain: that is neurons, neuronal connections, neurosystem. The mental: that is knowing, feeling, acting etc..

At the end, Hunyadi does seem to refer to a third position that seeks to bring the two irreconcilables together. O.i. this is possible if one lets go of the ideology in cognitivism in favor of the “hard science” which is clearly there. As already proposed by A. Lange last century.

E.O. COGN. 116.

The concept of mind contradicted.

Bibl. sample: J. Scher, ed., *Theories of Mind*, New York/ London, 1962.

Thirty-five intellectuals (virtually all of them professionals) contribute.

1. Mind as brain (physiologists, biochemists, behaviorists of behaviorist stripe).

2. Mind as ‘participation’ (mind as human, psychiatric and cybernetic stakeholders see it).

3. Spirit as Method.

Behold the three parts of this foliander.

We draw attention to *Cliff. Geertz* (prof anthropology Univ. Cticago), *The Growth of Culture and the Evolution of Mind*, o.c., 713/740.

In the history of behavioral science, the term “mind” has provoked a contradictory interpretation.

a.1. *Spirit as reprehensible.*

Those who practice behavioral science with the methods of physics dismiss such terms as “insight, understanding comprehension, image, thought, feeling, reflection, fantasy, -- consciousness etc.” as “mentalistic” i.e. burdened and laden with all the sins of the subjective nature of consciousness.

After all, consciousness escapes almost completely from the grip of physics and its human science derivatives. It is not “materially tangible.” Too fleeting.

a.2. *Spirit as a basic concept.*

For those who - in addition to the physicalist point of view - also reach a biological (‘organic’) and more so a human point of view, the term ‘spirit’ applies as a cautionary term. They emphasize the far-reaching implications for the physicist (// physicalist) standpoint, theoretically and methodically.

They emphasize the boundedness, the radical finitude of physics and, if one gets to the higher concept of man, even of biology to understand a phenomenon such as “consciousness” and “mind” as they are.

b. *Spirit as an extraordinarily useful concept.*

Geertz: there is no substitute for that term! He regrets the state of affairs at that time with few exceptions ‘mind’ did not function at all as a scientific concept but as a rhetorical flag, -- even when, as in some scientific circles (!) the term ‘mind’ was banned. The term served as an occasion: to accuse of mechanism (physicalism) or of subjectivism. It demands to be interpreted scientifically.

E.O. COGN. 117.

“Spirit” (“soul”).

Beginning with define.-- There is a metaphysical and an antimetaphysical view prevalent.

Mind metaphysically understood. Dictionaries (Lalande, Foulquié - Saint Jean) first of all know a limited concept of ‘spirit’ as life force (rarefied energy). Usually, however, ‘spirit’ means the following.

1. Spirit as the soul (principle of life). Thus, God, the angels and demons, the souls of the dead can be said to be “spirit.

2. Spirit as soul faculty. Our soul grasps, appreciates, wants reality (ontological) and situates within total reality itself (philosophical soul science), the cosmos (philosophical cosmology) and deity (philosophical theology).

In other words: metaphysics is only possible because our mind (soul) is attuned to what has just been outlined.

In this sense, spirit is distinguished from matter (spiritless reality) and from “nature,” (spiritless totality).

Note.-- The Pauline Biblical opposition “spirit/flesh” distinguishes “God’s life force” and “life force alienated from God.”

Spiritualism.

Spirit, with its emphasis on immateriality, is the basis of spiritualism, distinct from materialism. One thrust of this is called “philosophie de l’ esprit” by Louis Lavelle (1883/1951) and René Lesenne (1882/1954), who sought to understand spirit from spirit itself.

Mind a- and antimetaphysically understood.

Bibl. sample: P. Engel, *Introduction à la philosophie de l’ esprit*, (Introduction to the philosophy of mind), Paris, 1994.

Mental activities, preferably expressed in sentences (linguisticism), such as “I perceive. “Thou hast remembered”. “My mind tells me that ...”. “I am aware that I am the cause of your uneasiness”. “I feel pain” and so on, are called ‘mind’ from 1950 onwards. And in such a way that that type of ‘mind’ (intentionality) is understood not from itself but from what is non-ghost, i.e. physical (physicalism) or biological (functionalism,-- a form of physicalism). ‘Mind’ then becomes ‘neuronal activity’ or even ‘information processing’, analogous to the computer machine.

The intention is evidently to eradicate time-honored metaphysics as reality-denying “thinking” and to put logistics, artificial intelligence (ordinator work), neurology as well as linguistics in its place.

E.O. COGN. 118.

Conceptual apriorism.

Bibl. sample: P. Engel, *Introduction à la philosophie de l'esprit*, Paris, 1994.

The author pauses for a moment to comment on what he considers an exaggerated interpretation of mental phenomena. In doing so, he evidently has Malcolm (*N. Malcolm, Dreaming*, London, 1960) in mind.

Appl. model.

The a-prior-conceptual method asks whether e.g. one can cherish the intention (“intention”) to do something without the conviction (“belief”) that one can handle it or e.g. without the desire to do it.

a. If someone desires to do A and B, it does not follow that in doing both, A and B, one desires to do both.

b. If, however, someone has the intention to do A and cherishes the intention to do B, then it follows - always according to the aprioric-conceptual way of thinking - that he cherishes the intention to do A and B together.

In this way, the method attempts to make the concept or notion of “intention” distinguishable from the concepts of “conviction,” “desire,” “act of will,” and thus create order in our mental phenomena.

Dreams.

In *Dreaming*, Norman Malcolm argues that even if we perceived that our dreams in fact - as the neurological interpretation suggests - amount to “configurations” (images) in the neurons within our brains, we would not let our ordinary concept of “dreams” slip away.

The reason: that ‘ordinary’ concept rests on evidences, namely our introspective (and retrospective) perusal of dreams as well as that of fellow men (let’s say : the common mind) and the behaviors that spring from it. This is not refuted by any neuroscientific facts that after all are not our lived dreams but something else.

Note.-- Malcolm’s insistence on the lived dream causes Engel to apply the term “aprioric,” in the sense of “immune to professional scientific facts, insensitive.

What Engel fails to mention, however, is that Malcolm emphasizes the phenomenological pedestal of and the “ordinary” concept of “dreams” and... the scientific, essentially brain-scientific research: what would neuroscientists do if not at least someone knew about lived dreams? One would have no awareness of them and would not even speak of them,-- let alone investigate them brain-scientifically!

E.O. COGN. 119.

Eliminativism (cognitive philosophy).

Bibl. sample: P. Engel, *Introduction à la philosophie de l'esprit*, Paris, 1994.

The author outlines eliminativism as follows. With P.S. Churchland, *Neurophilosophy*, M.I.T., 1986, it is called "neurophilosophy."

Radical elimination.-- On the basis of the "cognitive" sciences -- logistics,-- linguistics, artificial intelligence, cognitive psychology, neuroscience -- as the only valid source of knowledge, one argues that the psychology of the common sense ("folk psychology") with its introspective and retrospective method and the concepts derived from it -- e.g., the concept of "consciousness" -- are radically "eliminable."

Cognition.-- The concept of 'cognition' (knowledge,-- usually 'information') is axiomatically put forward as the common object of said professional sciences. With the hope of arriving at a general science.

Thus Pascal Engel, according to whom emerging materialism - called "scientific materialism" (in a non-Marxist sense) - is the philosophy behind that cognitivism.

Exclusivism.-- Angel relies on it: cognitivism is exclusive.-- Thus it radically excludes any creationism or any paranormology. In other words: both the sacred (the sacred) in the form of creationism and the paranormal do not actually exist.

Note -- 'Creationism' has two main meanings. The axiom is that a transcendent (transcending all finitude) deity -- e.g., Yahweh or the Holy Trinity (Biblical) -- creates the universe and its (sacred) history. In this sense, 'creationism' stands in opposition to pantheism (the deity is identical with: 'immanent' to the world) and dualism (a deity and an anti-deity are at work).

As an aside, "creationism" also means the axiom that the universe and in particular its life forms were created from scratch as we know them today (a- and anti-evolutionary creationism).

'Paranormology' - (usually called 'parapsychology') postulates that, apart from physical phenomena, there are also undeniable non-natural phenomena which are 'paranormal' and which require and own being and own explanation, if one is not to project e.g. physical axioms into solid phenomena.

E.O. COGN. 120.

'Fundamentalist' creationism.

That American cognitivists are adamantly opposed to their creationists becomes understandable if one knows that they are unscientific creationism.

Bibl. sample: *St. J. Gould, Dorothy, It's Really Oz (A pro-creationist decision in Kansas is more than a blow against Darwin)*, in: *Time* 23.08.1999.

The Kansas Board of Education voted (6 for/ 4 against) so that in the public schools from 2000 onward, the theory of evolution may be expounded but will not be required on tests. -- The six pro are apparently unscientific creationists.

1. 1920+.-- Several U.S. states outright banned the theory of evolution in education. Only in 1968 did the Supreme Court condemn this as unconstitutional (freedom of speech).

2. 1975+.-- In Arkansas and Louisiana, the Board of Education held that if the theory of evolution was taught, the Bible story -- unscientifically interpreted -- should have equal exposition time. The Supreme Court rejected this in 1987.

3. 1999+ .-- The Kansas decision does not ban the theory of evolution and drops the requirement of Biblical compensation time but thus circumvents the law.

The unscientific argument.

The large-scale evolutionary process was not and is not directly observed as such: it is not a fact.

Science - says Gould - is twofold:

- a. determination of data (facts) and
- b. logical reasoning. Earth science, ancient history etc. do not rely on actual eyewitnesses! But are really scientifically valid.

The theory of evolution is similar to this: indeed, it is based on such a large number of data ('facts') - the testimonies of evolution - and on such a large number of reasonings that evolution amounts to a 'fact'.

One compares with a scientific-creationist, *Vlad. Soloviev* (1853/1900), who wrote in his *La justification du bien*, (Justification of the good), Paris, 1939, 192, "One cannot deny evolution: it is a fact." He did, however, strongly criticize what some evolutionists add to the scientific achievements on evolution.

E.O. COGN. 121.

Science publicly referenced.

Bibl. sample: P.Bastiaansen, *The broom of Richard Dawkins*, in: *Nature and Technology* (Brook) 67 (1999): 5 (May), 48/50.

The author pauses to consider R. Dawkins, *Unweaving the Rainbow (Science, Delusion and the Appetite for Wonder)*, New York, 1998. Dawkins was a zoologist but now teaches, in Oxford, “Public Understanding of Science.”

1. J. Keats (1785/1821; English poet) blamed I. Newton (1642/1727), who demonstrated with glass that white light was rainbow-colored, for thus “killing” its beauty.

Dawkins opts for Newton: he goes over the entirety of natural science - especially insofar as it breaks down matter by means of spectroscopy (the unraveling of electromagnetic waves emitted by a matter) - “from the quasars (discovered in 1960: “quasi-stellar radio source”) in the universe to a urine trail from a swaying elephant penis” (a.c., 49).

2. Dawkins critique.

Dawkins mercilessly combs **a.** religious believers, **b.** New Age (astrology, faith healers, Gaia adherents, paranormals) as forms of infantile human being, -- fallen behind in the course of evolution.

In other words: all those who assume that between heaven and earth there is more than what the purely physical sciences “see”. His work is intended to be “the broom” that sweeps aside all the a-scientific or even anti-scientific views of the past (from the infantile primitives onwards) and the present.

2.1. Bastiaansen.

The author thinks the book is brilliantly written. E.g. where he refutes the resistance of lawyers to DNA testing: the fact that experts differ in their assessment of the value of DNA tests does not justify doubting their value!

2.2. Bastiaansen.

What Bastiaansen does not accept is that Dawkins does not even address questions outside the natural sciences in a serious way. E.g., the problem of (the meaning of) death. “He becomes dogmatic and orthodox (*note:* assuming dogmatic certainties), lacks tolerance and respect, and most of all lacks a hand in his own heart.

In other words, he irritates because of the “Oxford tone.”

Note.-- It is not just Dawkins who suffers from that oxfordian lack of awareness of the limits of the natural sciences, however valid they may be.

E.O. COGN. 122.

'Dionusos' and 'God'.

Bibl. sample: Chr. George, *Polymorphisme du raisonnement humain*, (Polymorphism of human reasoning,), Paris, 1997, 48.

The author connects to a proposition "If Dionusos is in need of celebration, he drinks wine." His comment: this statement refers to an imaginary being. Yet one can assign truth conditions to it by leaning on what is usually claimed of the imagined world to which Dionusos belongs.

Note.-- What does George mean by "usually? The mentality of religionists? The modern rationalist mentality? Or the two? What is intentionally certain is that a number of people, past and perhaps present, in Greece 'believe' in mythical beings (e.g. Dionusos), 'expect' something from them, indeed, bear witness to those inner states in rites, i.e. external 'behavior'. That would then be the psychological standpoint on which the cognitivist can elaborate further in his typical way.

As an aside, what constitutes myth is to this day, even among myth analysts a highly debated issue.

Belief in God (O.c., 142.)

George.-- "One can *imagine* that faith in God is strengthened by all the religious practices to which one is obligated for reasons of faith in God such that, if God did not exist, such practices would be meaningless. Likewise, one can *imagine that* faith in God justifies these practices". One sees that the term '(imagining)' is italicized.

Cognitivists, when dealing with non-natural realities, like to use terms like "imagined" and "imagining" (the latter as a method).

In this a main characteristic of cognitivism is exposed: about intentional and certainly about non-modern intentional realities one judges - not on the basis of direct participation in that about which one wishes to acquire 'cognition' but rather - on the basis of radical and then in essence purely physical distance.

As if the essential nature of the object to be "known" could not provoke a different scientific response than that of a physicist toward a purely physical object. Wouldn't that be cognitive dissonance?

E.O. COGN. 123.

Power and limits of introspection.

Bibl. sample: G Rey, *Introspection*, in: O. Houdé et al., eds., *Vocabulaire de sciences cognitives*, Paris, 1998, 221s..

The author suggests, “Everyone seems to know immediately the essentials concerning what is thought or felt at any moment.”

Note.-- Rey is careful: he says “seems” (“paraît”). With good reason because many people, including normal ones, today do not know what is going on inside them and realize this in painful ways.-- But up to that.

S. Freud.-- Descartes’ confidence in (self)consciousness was already updated by the Cartesian G.Leibniz. But it is Freud - according to Rey - who “gave scientific prestige to such a hypothesis which states that unconscious processes work in us”. It is today a commonplace in linguistics (*note:* who does not think of the structuralists?) and in cognitive psychology. The latter states that most cognitive processes that underpin intelligent behaviour are inaccessible to introspection as unconscious.

Experimental data.

Rich. Nisbett and Tim. Wilson, in *On Telling More than We can Know*, in: *Psychological Review* 84 (1977): 231/259, Experiment.

Scenario.-- Given-- Different pairs of stockings that are in fact identical.

Given 1.-- Choose a pair. The test subjects choose the pair on the right.

Given 2.-- “Why dost thou choose this pair?”. The test subjects come off with a series of “reflections” that one can prove are not the true explanation.

Given 3.-- “How is it that ye choose the right?”. The test subjects vehemently deny that their placement plays a role.

Conclusion.-- They choose “under the influence” of unconscious factors and processes.

Reception.-- This data provoked many responses. The most Methodical is *Lars Ericsson/ Herb. Simon, Protocol Analysis (Verbal Reports as Data)*, M.I.T.. Press, 1993. These attempted to construct a detailed computational theory concerning introspective mechanisms.

Note.-- What exactly do the Aisbett/ Wilson experiments prove? For, if all possible reductionists and eliminativists were not aware of themselves and their environment and could “look inward,” how could they ever look for an out-of-consciousness and introspection “explanation” of it in a (self)conscious way?

E.O. COGN. 124.

The unconscious hinted at by the conscious.

Bibl. sample: Ol. Perrin, *Comment Freud, en inventant l'inconscient, nous a rendu très compliqués*, (How Freud, by inventing the unconscious, made us very complicated), in: *Le Temps* (Geneva) 12.07.1999.

In 1896, S. Freud (1856/1939) introduced the term “psychoanalysis. O.g., two salient premises:

a. the sick people then diagnosed as ‘hysterical’ prove to Freud that ‘psychic’ includes more than ‘conscious’;

b. he himself applies his psychoanalysis to himself in order to uncover the unconscious side of his psychic life.

1. *Some samples.*

The signs of the unconscious in man are central. And immediately their interpretation (which makes Freud a hermeneuticist). We list, with Perrin, some of them.

(1). *Posthypnotic command.*

Freud hypnotizes people and in that hypnosis state gives them some command to carry out after the hypnosis is done. Once awakened, people carry this out without being aware that they were ever given such a command in hypnosis. They act from the unconscious.

(2). *Free association.*

This later replaces hypnosis. Axiom; some psychic phenomena - e.g., an inexplicable fearfulness - refer to other psychic phenomena which, at least for the time being, do not show themselves (they are not (yet) a “phenomenon”). As long as the conscious soul life “keeps watch,” one does not become aware of them, e.g., for reasons of shamefulness (something that was true in Freud’s Puritan times of all that was sexuality, e.g.). The sense of honor “keeps watch”.

(3). *Dream, witticisms (humor), slips of the tongue.*

In time, Freud will look for the signs of the unconscious especially the dream - his own, for example.

2. *Therapeutic outcomes.*

Hysterical patients then refuted established medicine (psychiatry, neurology) by not showing any “organic” lesion that could be exposed by the physical medicine of those days.

In such cases it showed the limitations of the axioms! These worked like a straitjacket that did not even pay serious attention to purely ‘psychic’ phenomena. In this way the ‘view’ of the medical profession was caught within physics as an exemplary ‘science’.

E.O. COGN. 125.

Hysterical patients were suspected (*note*: today this is still the case with some contemporaries) of simulating (“playing comedy”), -- in order to make themselves interesting.

In the wake of J.-M. Charcot (1825/1893; la Salpêtrière), Freud thought that fundamentally, with proper guidance, they were still best informed about the factors (unconscious of course) that disturbed them. Freud drew the healing from the patients/patients themselves.

Consciousness.

Perrin relies on *Fr. Roustang, Introduction à la psychanalyse*.-- Seemingly conscious soul life seemed “weak. For it was controlled by unconscious factors (summarized according to Freud in the ‘libido’, the deeper feelings of lust).

Dual triumph of consciousness.

a. For reasons of ‘embarrassing’ nature, the consciousness represses ‘things’ that it cannot simply handle (e.g., they are shameful). That repressing - however unconscious - clearly shows that our conscious soul life has ‘power’ over inconvenient elements.

b. Freud’s invention, psychoanalysis, now ,relies precisely on that controlling through consciousness - the sick know “in the ground” (in a repressed way) that they once repressed - to make the patients/patients aware that they once proceeded to repress.

In other words: the conscious intervention of the psychoanalyst forces the consciousness of those being treated to once again consciously face the harsh reality and not to repress it any further.

Fr. Roustang.-- If the unconscious counts as an explanation of what mere consciousness -- *note*: without psychoanalytic commitment -- cannot see, because cannot process, then psychoanalysis necessarily reinforces the “pretense” of consciousness.

Conclusion.-- One therefore does not claim too hastily that “psychoanalysis” has “dethroned” consciousness -- as the modern West put it centrally.

On closer inspection, it is just the opposite. Even though Freud himself referred to his psychoanalysis as the “humiliation” of (the Western understanding of) consciousness, according to *Roustang* the opposite is true.

E.O. COGN. 126.

The 'unmanageable' concept of consciousness

On this subject, F. Droste, *The language of consciousness in: Our Alma Mater* (Leuven) 53 (1999): 2 (May), 166/203.

The author ties in with the German physiologist Em. Du Bois-Reymond (1818/1896) who wrote in 1872:

- a. that not only does one not know what consciousness is and
- b. that we will never know.

At least from the material observations.

In cognitivist circles, one hears similar tones.

Droste argues that Dubois-Reymond is the first to harbor doubts about the how and what of consciousness. From a materialist point of view, this may be correct. But look: G. Bolland, Hrsg., *G.A. Gabler's Kritik des Bewusstseins (Eine Vorschule zu Hegel's Wissenschaft der Logik)*, (G.A. Gabler's Critique of Consciousness (A Preschool to Hegel's Science of Logic)), Leiden, 1901, iii, says that Gabler's work appeared in 1827 in the wake of *Hegel's Phänomenologie des Geistes* (1807). Hegelians, although more than saturated with the concept of consciousness, are far from uncritical in this regard. For believers in consciousness, too, consciousness poses problems of definition and explanation. But so far.

The method.

What consciousness is, cannot be explained or taught before or outside consciousness. For it is only in its course and in the knowledge of itself! Only the complete method which emerges from consciousness itself, and which is indwelt by the concept of consciousness and is appropriate to that concept, should apply to the explanation of what consciousness is.-- That is the method.

Folk expressed:

once one is aware of oneself and one's environment, by looking into it more closely -- through the reflective method that examines oneself as a conscious being in the very course of conscious life -- , one can begin to know more than mettle what consciousness is and even what it could be,-- in its possibilities.

Even more folksy: once one is not unconscious one can begin to think about what it is, consciousness.

But natural scientists, including cognitivists, approach consciousness through what it is not. That is the paradoxical method. Scientifically and methodologically that is possible. But if one wants to re-establish a whole culture on that basis, then such a 'science' exceeds its own limits. In Hegel's language: it forgets its finitude.

E.O. COGN. 127.

Paranormal phenomena and cognitivism.

Eliminative cognitivism as background.

“An adherent of eliminative materialism unscrupulously adheres to the dogma of scientism (*note*: idolization of professional sciences), and he declares that “common sense” is seriously ill.

This radical stance goes back to the position of Paul Feyerabend (1924/1994; anarchist epistemologist) and Richard Rorty (1931/2007) in the early 1960s.

For contemporary elaboration (...) see *Patricia Churchland, Neurophilosophy (Towards a Unified Science of the Mind-Brain)*, M.I.T. Press, 1986, II, and her husband *Paul M. Churchland, A Neurocomputational Perspective (The Nature of Mind and the Structure of Science)*, M.I.T. Press, 1989, 1-6.

Science - in particular computational neurobiology - is the only source of knowledge”. (*S. Cuypers, Dusty minds (On materialism)*, in: *Tijdschr.v.filos.* 56 (1994): 4 (Dec.), 701)

The author adds that even in materialist circles the Churchland’s thesis is hotly debated.

Precise now concerning **a.** paranormal phenomena and **b.** conscious phenomena.

The unbridgeable gap.

Bibl. sample:

-- *P. Engel, Introduction à la philosophie de l’ esprit*, Paris, 1994, 56ss.. This refers to:

-- *Paul Churchland, Eliminative Materialism and Propositional Attitudes*, in: *Journal of Philos.* 1979;

-- *Patricia Churchland, Neurophilosophy* (1986).

Thesis.-- Folk psychology is indeed a theory, as J. Fodor claims. But this only according to the design, which mimics that of the real mental sciences.-- For “common sense” applies the propositions of folk psychology to express the laws of behavior and this with predictive value. See here.

(Vx) (VK) (Vm). -- In lawful form: (x has a mass m) and (x undergoes a force k) -- (x undergoes an acceleration k/m).-- This is the physical paragon.

(V = for all holds...) (Vx)(VP) --- Lawful : (x hopes that p) and (x discovers that p) --- (X is satisfied that p).-- This is the folk psychological model.

Essential difference.-- Physics usually explains number values. Folk beliefs explain acts in the form of propositions and their contents.

E.O. COGN. 128.

Critique of Churchland's.

Thesis: "Such laws of folk psychology are false". Reason: these presuppose all kinds of "entities" that are nothing in themselves.

1.-- That the words used for this purpose 'refer' (refer) to nothing, is particularly evident in terms such as 'witch' or 'demonic possession'. -- Things that the common mind -- centuries ago or even now (?) -- attributed to certain persons.

2.-- That other terms like 'belief' (conviction) or. 'intention' likewise refer to nothing is also evident, though such entities live on to this day.

Argumentation.

Current neurophysiology -- Churchland's said -- proves that such intentional states do not exist. Exists only: neurons, synapses,-- material configurations within the brain.

Note.-- The artery of the argument: an unbridgeable gap exists between the vernacular intentional vocabulary and the vocabulary of neurophysiology. Well, neuroscience is the only one that really has the right to talk about cognition.

Angel.

Such reasoning is similar to that of the dualists who claim that such an unbridgeable gap proves that the mental will never prove identifiable with the brain.

Identity theory reduces the mental to the cerebral (reductionism).-- Eliminativism reduces nothing because the intentional life is nothing.

Conclusion.

The Churchland's argue: popular belief in psychic phenomena is a degenerate scientific program in that it has not evolved for centuries. It must be replaced by "hard science". "Hard science" is neuroscience.

Note.-- The Churchland's hold a special view of scientific progress. Folk psychology, for example, and neuroscience are mutually incomparable ("incommensurability") and relate to each other like alchemy to today's chemistry or logistics to today's physics. There is an abyss between those worlds.

Note.-- An eliminativism is also preached by *S.Stich, From Folk Psychology to Cognitive Science*, M.I.T. Press, 1983.

E.O. COGN. 129.

Normal, paranormal, abnormal "mind"

Beginning with a sampling, *Kay Redfield Jamison, De l'exaltation à la depression (Confession d' une psychiatre maniaco-depressive)*, Paris, 1997 (// *An Unquiet Mind*, N.Y., 1995).

The author is professor of psychiatry at the School of Medicine at John Hopkins Univ. At fourteen (1961), psychosis began. Gradually. "I was 16 or 17 when I realized that my fits and outbursts were exhausting my surroundings and all the more so since, after long weeks of delusions of grandeur and sleepless nights, my thoughts degenerated into real and disturbing gloom" (o.c.,41). She had three close comrades - "beautiful boys" among whom two had manic-depressives in the family and the third a mother who committed suicide. "All three on their way to manic-depressive states."

The Syndrome.

Throughout the book, she goes through the syndrome intermittently. Here at the beginning.

a. Manic: "Himmelhoch jauchzend". - "I was running around in all directions.... (...). Brimming with plans and overflowing with enthusiasm(...). Went out night after night. Was active all night(...). I felt supreme".

b. Depressed : "Zum Tode betriibt". -- then suddenly: "After that, the basis of my life and of my mind gave way(...). My thoughts became extravagant. I read and reread the same text only to find that I did not remember any of it(...). Dead tired I woke up this morning(...). Obsessed with death". (o.c., 42/44).

Lithium ingestion all the time.

Going at rest. Then hyperactive again.-- The curious thing that should make us all think: writer claims -- and she knows the intellectual middle excellently -- that "there are so many pros who are manic-depressive" at higher institutions. What exactly is 'mind', spirit, in these people who perhaps, in lucid moments write genius texts (writer says so) then go into hiding in the depths of the disturbed mind?

M.V. Kline, dir. Institute for Research in Hypnais (Valhalla, N.Y.), cites *W. James* in his article: *Mind (A Descriptive Operational Definition)*, in: *J. Scher, ed., Theories of Mind*, N.Y./ London, 1962, 661/ 673. James posed the question of "mind" when borderline experiences -- drunkenness, drug use, nitrous oxide hits,-- Kline adds: dreams, hallucinations, hypnosis and so on occur.

Most Holy Trinity. 17.09.1999

E.O. COGN. 130.

Fractalism.

Bibl. sample: J. Cl. Chirollet, *Philosophie et société d'information (Pour une philosophie fractaliste)*, (Philosophy and the information society (For a fractalist philosophy)), Paris, 1999.

The author rails against the established French university philosophers who do not or do not sufficiently take into account our information society. If they are not radical or not against it.-- He compares with the objections to the emerging printing press in the XVth century, which in retrospect was a boon also for philosophy.

The fractal as a paragon.

The term “fractal” (from the Latin “fractus”, broken) was introduced by the Mathematician *Benoît Mandelbrot* in his *Les objets fractals (Forme, hasard et dimensions)*, (Fractal objects (Form, chance and dimensions)), Paris, 1975-1; 1995-4.

Simply stated: geometric configurations (flat or three-dimensional) become intertwined instead of distinct, instead of regular irregular, instead of singular and transparent multiple and opaque.-- Behold the model. The original now.

Fractalism.

What is actually meant by Chirollet is the *philosophia perennis*, the philosophy that presents itself as eternal.

Just as geometrically everything which is form is analyzed again and again from a different perspective in almighty mathematics such that the geometrical forms show in-between flows, irregularities, deviations of all kinds from everything which was classical form and can only be subjected to very provisional analyses, so too is the reality which philosophy studies. In a never ending opacity - a.o. due to limitless unravelling one after the other into unsightly details - the philosophy of the information era needs to lose itself. The present-day thinker would have to ‘absorb’ the deluge of all kinds of information time and again in order to ‘keep up’.

All that philosophizing should do is “mettre en forme,” provide the formations of such a chaotically-complex and opaque fact.

Here is an abridged but as accurate as possible version of one of the definitions which await “eternal philosophy”, if at least Chirollet is right. But perhaps what he imagines is the umpteenth interpretation of the all-embracing concept - platonic: idea - “eternal philosophy”. And there is no break but continuation in virtue of Revival.