ANTHOLOGY of PRINCIPLES PROPOSITIONS THEOREMS ROADSIGNS DEFINITIONS POSTULATES APHORISMS etc.

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CYBERNETICS AND CIRCULARITY

1. Socratic Ignorance: "I know that I don't know; but many don't even know that."
2. Fundamental Ignorance! " "
3. The Ethical Imperative! "Act always so as to increase the number of choices.". A preferred form is "I always act so as to increase the number of choices."[†]
4. The Hermeneutic Principle: "The hearer, not the speaker determines the meaning of an utterance."

5. The Principle of the Double Blind: "The blind spot: One does not see what one does not see."
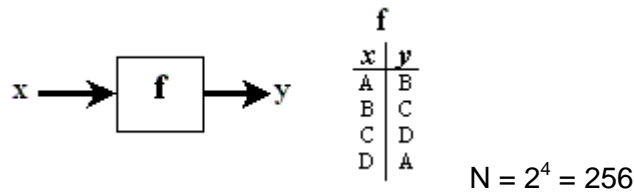
6.

   Hold paper with right hand, Close left eye. Fixate star. Move paper slowly to and fro along the line of vision, and watch black spot disappear (at eye-paper distance between 12 and 14 inches). Keep asterisk fixated, maintain eye-paper distance, and move paper slowly in circles: black spot remains invisible.
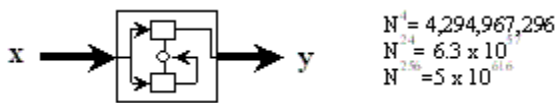
7. Metaphysics Fundamental Theorem: "Only <u>those</u> questions which are in principle undecidable, <u>we</u> can decide".

8. Jean Piaget's Epistemological Postulate: "He who organises his experience organises the world".
9. The Constructivist Postulate: "Experience is the cause, the world is the consequence."
10. The Realist Postulate: "The World is the cause, experience is the consequence."
11. The Principle of Relativity: "If a Hypothesis holds separately for A, and it holds separately for B, the hypothesis is rejected, if it does not hold for A & B together."
12. Explanatory Devices: analogies; causation; explanatory principles; metaphors; parables;...
13. Explanations: "Explanations link descriptions semantically".

14. Trivial Machines: "(i) Synthetically determined; (ii) History independent; (iii) Analytically determined; (iv) Predictable."
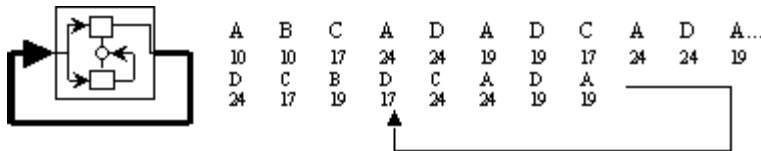
15.

$$N = 2^4 = 256$$

16. Non-Trivial Machines: "(i) Synthetically determined; (ii) History dependent; (iii) Analytically indeterminable; (iv) Unpredictable."

$N^1 = 4{,}294{,}967{,}296$
$N^{24} = 6.3 \times 10^{57}$
$N^{256} = 5 \times 10^{616}$

17. Recursively Operating Non-Trivial Machine: "Computing EigenValues, Eigen-Behaviours, Eigen-Operators, Eigen-Organizartions, etc..."

18. "THIS SENTENCE HAS ....LETTERS";
$E_1 = 31$; $E_2 = ?$; etc.

19. Humberto Maturana's and Francisco Varela's Principle of Natural Drift! "Every operationally closed system changes by natural drift."

20. The nervous system is organized (or it organizes itself) so as to compute a stable reality.

21. The Logic of the World Principle: "The logic of the world is the logic of descriptions (of the world)."
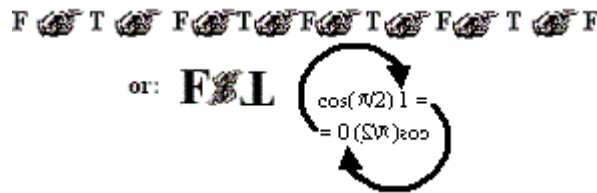
22. Necessity arises from the inability to make infallible deductions.

23. Chance arises from the inability to make infallible inductions.

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24. Paradox:

The orthodox paradoxically is ontological: when P is true it is false,
and vice versa.

Ontogenetically, however, by apprehending, 🐭 P

$$F \text{🐭} T \text{🐭} F \text{🐭} T \text{🐭} F \text{🐭} T \text{🐭} F \text{🐭} T \text{🐭} F$$

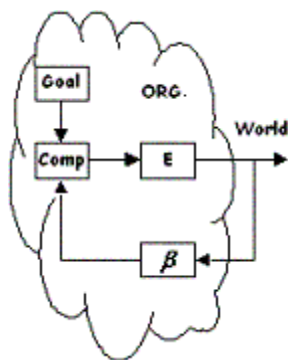or: **F⚡L** $\left(\begin{array}{c} \cos(\pi/2)\,1 = \\ = 0\,(2/\pi)\cos \end{array} \right)$
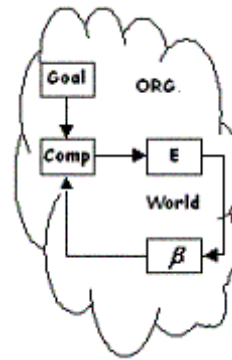
25. Truth: "The invention of a liar."
26. Pouloide: "The Kinematic of Conical Sections".

27. Undecidables (in principle):

1. "The Entscheidungsproblem", Formal systems (Godel).
2. "The Analytic Problem" for the Universal Turing Machine.
   [See discussion in H.v.F.'s "Metaphysics of an Experimental Epistemologist". Pask often asserted the concurrent was not the serial. A later formulation was the impossibility of mapping the kinetic into the kinematic without difference. **R.N.G**]
3. "The Halting Problem" for the Universal Turing Machine.
4. "How did the Universe come into being?"
5. "Am I a part of, or apart from, the Universe?"
6. Fishlike creature (in Cybernetics of Epistemology): "What moves?"
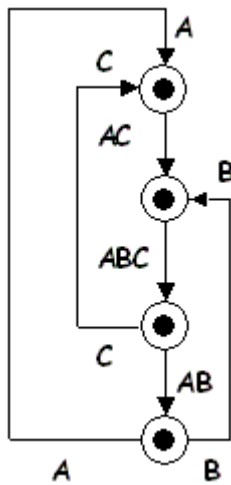7. Feedback: "Where does it go?"

Realism   **Constructivism**

26. Circularities:

Chemical   **Lexical**

	After	Later	Subsequent	Succeeding	Consequently	Following
After		X	X	X	X	
Later	X				X	X
Subsequent						X
Succeeding	X		X	X		X
Consequently						X
Following	X					

Our thanks to Dipl.-Ing. Horst Lehrheuer who points out: Heinz von Foerster (HvF) changed the earlier wording of his ethical imperative

"Act always so as to increase the number of choices" in a conversation with Bernhard Poerksen (book "The Certainty of Uncertainty," I think) to:

"**I always try to act so as to increase the number of choices**."

This change is significant since the new wording is now fully synergistic with HvF's idea of separating ethics (which is only about the "I") from morality/morals (about the "Thou/You"); a distinction that was very important to Heinz von Foerster as he stressed at several occasions in his later published conversations.