MONEY, SEX AND INCOMPLETENESS. COMMENTARY ON KURT GOEDEL'S THEOREMS BY DR. WINTERMUTE [SM].

INTRODUCTION

Kurt Gödel was way ahead of his time when he discovered his *incompleteness theorems*, but because of that, he was never rigorously fact-checked by the scientific community of his days and even became paranoid at the end of his live. It was the modern rationalists **R. Descartes** and **G.W. Leibnitz** who first came up with the idea of rigorous proof only by the principle of non-contradiction (in **B. Russell's** interpretation "everything analytical is true" – *material incompatibility* according to **Robert Brandom**) and the principle of sufficient reason ("everything true is analytical" (**B. Russell**) – *mediation* according to **Robert Brandom**). This idea is still valid, despite Gödel's famous two incompleteness theorems.

1. SYSTEM OF INFERENCES INSPIRED BY C.S. PEIRCE, I. KANT AND G.W.F. HEGEL

SYNTHETIC A POSTERIORI MATERIAL INFERENCES (MALE OR FEMALE). *INCOMPLETE AND/OR INCONSISTENT.*		ANALYTIC A PRIORI FORMAL INFERENCE (MALE). *INCOMPLETE.*
ABDUCTION (MALE-SPATIAL) A → B. – Crime is caused by greed (Rule). B. – This man is greedy (Result). A. – This man is guilty (Case).	***INDUCTION (FEMALE-VERBAL)*** A. – This man is guilty (Case). B. – This man is greedy (Result). A → B. – Crime is caused by greed (Rule).	***MODUS PONENS (DEDUCTION)*** A → B. – Crime is caused by greed (Rule). A. – This man is guilty (Case). B. – This man is greedy (Result).
ANALYTIC A POSTERIORI FORMAL INFERENCES (FEMALE). *INCONSISTENT.*		SYNTHETIC A PRIORI TRANSCENDENTAL INFERENCE (ANDROGYNOUS). *COMPLETE AND CONSISTENT.*
META-ABDUCTION Hypothesis: *This man is guilty*. A → B. – Crime is caused by greed (Rule). ¬B. – This man is not greedy (Result). ¬A. – This man is not guilty (Denial of Case).	***META-INDUCTION*** Hypothesis: *Crime is caused by greed.* A. – This man is guilty (Case). ¬B. – This man is not greedy (Result). ¬(A → B). – Crime is not caused by greed (Denial of Rule).	***DIALECTICS (META-DEDUCTION)*** "A → B". – Red beans are said to be worth a useful information (Rule). A. – These beans are red. (Case). ¬B. – These beans aren't worth a useful information (Denial of Result).

2. THE PROBLEMS WITH INFORMAL (SYNTHETIC A POSTERIORI) REASONING

2.1 DEDUCTION OF A VARIANT OF THE RUSSELL-PARADOX (SET THEORETICAL PARADOX)

The following meta-arithmetic assertion M can't be proven in set theory, yet is true for set theory:

M: "From a general rule and a singular result, one can't infer a particular case".	CONTRADICTORY CONSEQUENCE: ⊢ SINGULAR ∈ PARTICULAR ↔ ⊢ SINGULAR ∉ PARTICULAR

This proposition is a fact, it is thus the result from a particular case analyzed by a rule.

But it is also self-contradictory, and hence non-decidable in set theory, which is shown as follows:

> A → B **General rule**: A Particular case: (*General rule, singular result*) → B Singular result: (*no particular case from a general rule and a singular result*).
>
> B **Singular result**: (*no particular case from a general rule and a singular result*).
> _____
>
> A **Particular case** no-((*General rule, singular result*) → Particular case: (*no particular case from a general rule and a singular result*)).

2.2 THE INDUCTION PARADOX (HUMES GENERALIZATION PARADOX)

For induction (meta-arithmetic), there exists a similar paradox. It is self-evident that a true proposition about a singular element of a particular class can't be generalized for all singular elements of that particular class. However, the proposition "a true proposition about a singular element of a particular class can't be generalized for all singular elements of that particular class" is itself a singular element of the particular class of propositions for which the general property that it is true to say about it that what is true to say about it can't be generalized for all the elements of the class to which it belongs, can precisely be generalized for all singular elements of the class of propositions. Therefore, <u>it is formally undecidable whether inductive generalization is valid or not</u>.

3. GOEDEL'S PROBLEM WITH FORMAL/TRANSCENDENTAL REASONING

I have developed my own formal logic notation, making use of the following symbols:
SIGN DEFINITION
∼   Negation
?   It appears that
!   It is necessary that
→   Implication
=   Necessary and sufficient condition
S/P   Any scientific proposition of the form "S is P".
(...)   Brackets. These indicate that signs preceding the bracket operate on its whole content.
∃   Existential quantifier
∀   Universal quantifier
$\stackrel{\text{def}}{=}$ Definition
Cd   Contradiction

Theorem T1. Law of Hegelian Transparency: $\sim(?(S/P) \rightarrow !(S/P)) \rightarrow$ Cd.
Proof: $(\sim(?(S/P) \rightarrow !(S/P))) \rightarrow (\sim(?(?(S/P))) \rightarrow (!(?(S/P))))$.

Theorem T2. Law of Kantian Opacity. $(?(S/P) \rightarrow !(S/P)) \rightarrow$ Cd.
Proof: $((?(S/P) \rightarrow !(S/P))) \rightarrow ((?(S/P) \rightarrow (!\sim(S/P)) \rightarrow ((!S/P) \rightarrow (!\sim(S/P)))$.

By **Theorem T1**, it is proven that things are as they seem/appear. Yet by **Theorem T2**, it is also proven that things aren't as they seem/appear. This may be interpreted in two ways. Either things are *both* as they seem and also not as they seem (which would contradict the **Law of Contradiction**, a case called by Kurt Gödel 'inconsistency'). Or things are *neither* as they seem, nor not as they seem (which would contradict the **Tertium non Datur** and is a case called by Kurt Gödel 'incompleteness'.) Having one meta-arithmetic assumption is the bare minimum for generating arithmetic equations:

If $\exists X = Y$, if sense and reference are the same, then sometimes $= = \neq \rightarrow Cd$. Therefore $\sim(?(S/P) \rightarrow !(S/P))$. If, on the other hand $\forall X \neq Y$, if sense and reference are distinct, then $(X \overset{def}{=} [X]) \neq (Y \overset{def}{=} [X]) \rightarrow Cd$, thus $(?(S/P) \rightarrow !(S/P))$. $\exists X = Y$ leads to a contradiction, if sense and reference are the same; $\forall X \neq Y$ leads to a contradiction, if sense and reference are distinct; and for the case that we don't know whether sense and reference are the same or distinct, the consistency of our system can't be proven, and it remains incomplete. Since we've already seen that "S is P" is undecidable, it is also undecidable whether two things are identical and, therefore, whether two things are different from each other.

Gödel divides all formal systems sufficiently complex to make arithmetic Statements neatly into incomplete and inconsistent systems. Either Gödel is wrong and there are such formal systems which are neither incomplete nor inconsistent; or Gödel's own system is complete and thus inconsistent; or Gödel's system is itself not a formal system at all, although it's meta-formal (transcendental).

4. COMMENTARY ON A QUOTATION FROM ROBERT BRANDOM

> "The Cartesian strategy for realizing the concept of knowledge was to stake out a realm of genuine cognition unriven by any gap between appearance and reality, by restricting its objects to appearance itself. For while something could appear to be red, it could not appear to appear red and not really appear red. For this restricted realm of certainty as both subject and sole object of knowledge, whatever appears to be so is so. The boundaries of the knowing self were taken to coincide with what could be known in this special way of realizing the concept of knowledge on the side of its unity" (**Robert Brandom**. *A Spirit of Trust. A Reading of Hegel's Phenomenology*. Harvard, 2019, p. 456).

Robert Brandom contradicts here his project of "making explicit" only what is implicitly always-already a given in our reasoning (i.e., the analytical) and instead adopts an "expansion strategy". He does not seem to understand that the State, Science and Money are only senses without references. It is thus wrong to criticize Descartes for his rationalism and Immanuel Kant for his model of moral autonomy. Consequently, it is not trust in the institutions which is necessary, but choice. Trusting an institution is a figurative way of committing to trust the individuals that constitute the concerning social institutions. I pledge here for a radical nominalism, although I'm well aware that the existence proof of language itself remains problematic. Generally speaking, there cannot be any positive "existence proofs", since it is formally undecidable whether nothingness exists or does not exist. The propositions "Nothingness does not exist" and "Nothingness does exist" are formally equivalent. Therefore, it could be proven one day in the future that language itself is also a non-existent. On the other hand, the non-existence of a presumed entity can be easily shown, if and only if all of its accepted definitions are self-contradictory and if in addition to that, assuming its non-existence is not also self-contradictory. Science is non-existent due to Gödel's theorems, since its concept demands that the predicate "is necessary" is not identical with the predicate "is impossible". Money and the State are non-existents, since they demand to simultaneously trust and not trust people. Therefore, there are only individual beings with individual attitudes towards truth and morality. Community, on the other hand, does exist, but it does not transcend concrete intersubjective relationships. Once the universal necessity of choice is proven, it becomes clear that there could not be any unvoluntary association between individuals if there hadn't been autonomously chosen associations to start with. That is the sociological fact which now needs to be made "explicit" through defining subjectivity.

5. INDIVUDAL DIFFERENCES IN THE VERIFICATION OF SENTENCE-PICTURE-RELATIONSHIPS

In a modification of the familiar sentence-picture comprehension task (Chase & Clark, 1972), 70 university undergraduates verified simple sentence-picture pairs. Two reaction times were collected on each trial: (a) comprehension time, the time to study a sentence of the form PLUS IS (NOT) ABOVE STAR, and (b) verification time, the time to verify whether a picture of the form [see on the left] was true with respect to the sentence. The verification reaction times of individual subjects were fit to the Carpenter and Just (1975) constituent comparison model and two groups of subjects were isolated. The larger group was well fit by the model, indicating that they adopted a linguistic strategy. The smaller group was poorly fit by the model; their reaction time pattern suggested use of a pictorial-spatial strategy. Psychometric measures confirmed a clear difference between the two groups in spatial ability but not in verbal ability. This difference was consistent with the hypothesized verification strategies; the subjects using the pictorial-spatial strategy demonstrated markedly higher spatial ability. These findings limit the generalizability of any linguistic comparison model by demonstrating that TWO quite different comprehension strategies are used consistently by different subjects. More important, the subject's choice of strategy is predictable from his psychometric measures of cognitive ability.

COLIN M. MACLEOD, EARL B. HUNT, AND NANCY N. MATHEWS. *Individual Differences in the Verification of Sentence-Picture Relationships.* University of Washington. LEARNING AND VERBAL BEHAVIOR 17, 493--507 (1978).

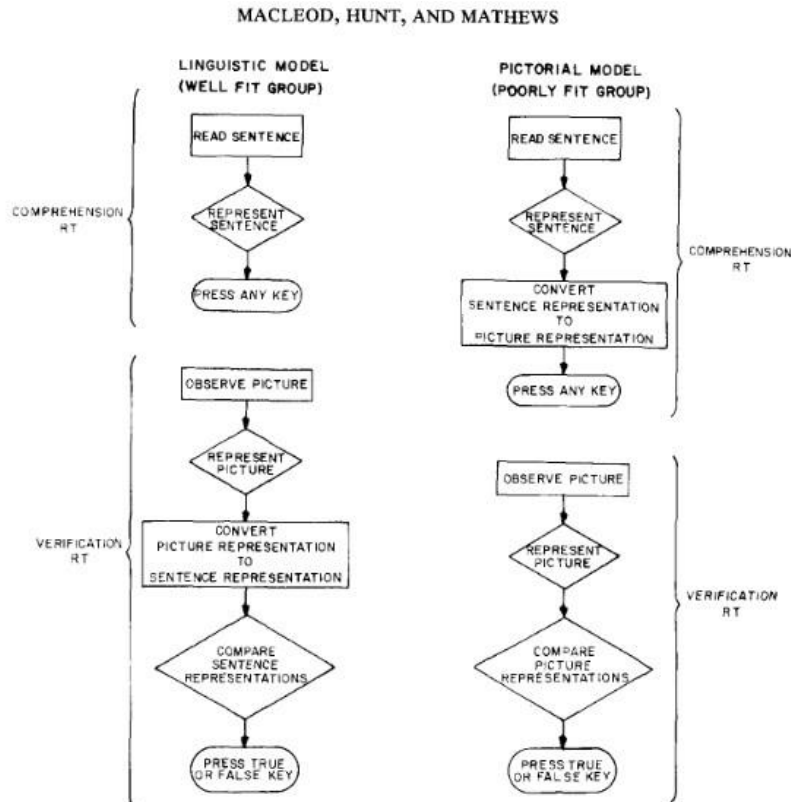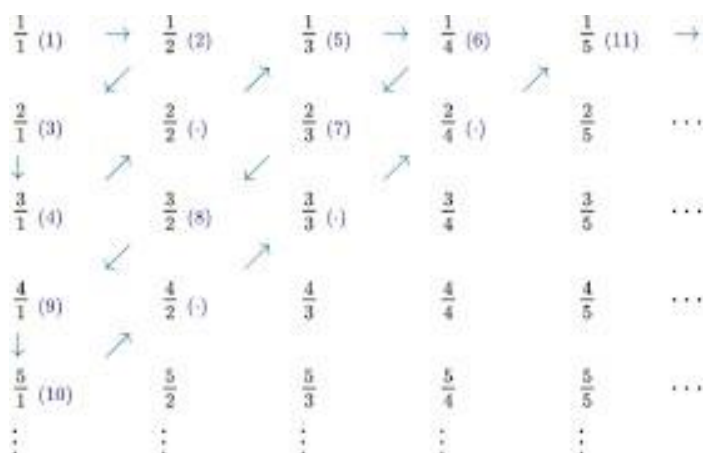502   MACLEOD, HUNT, AND MATHEWS

FIG. 3. Sentence–picture verification models for the two-RT procedure. On the left is the linguistic model; on the right is the pictorial-spatial model.

6. SUBJECTIVITY AS INFINITE IMAGINATION AND THE DIAGONAL PROOF

Georg Cantor, *Diagonal Proof*.

Paradox: the set of positive rational numbers is equipotent to the set of natural numbers, even though the set of natural numbers is but a subset of the set of positive rational numbers.

Subjectivity – Infinity

The thoughts of a subject are themselves non-thinkable, if not as an object, and thus as non-subject. Always, when I reflect upon the question of how to act as a subject, I have already acted (acted as a thinker) – without having reflected before in order to justify my actions (as a thinker). The subject is infinite, because inconsistent, and inconsistent, because infinite (see also chapter 2).

Objectivity – Finity

Everything that is thinkable is an object and thus identical to itself. Which is to say, everything that is thinkable is an arithmetical object (a tautology, a necessary inference).

Spatial coding (Geometry)

Being mortal is a metaphor of being a human.
1. Socrates is mortal.
2. All men are mortal.
3. Socrates is a human.

Verbal coding (Algebra)

Socrates is a metonymy of all humans.
1. Socrates is mortal.
2. Socrates is a human.
3. All men are mortal.

Calculation (Arithmetic)

The relationships Socrates/human and human/mortal are analogues:
1. Socrates/human
2. Socrates/human = Human/mortal
3. Socrates/mortal

↓ DIAGONALISATION
Conclusion arithmetically undecidable from the premises: 50/50.

↓ DIAGONALISATION
Conclusion arithmetically undecidable from the premises: 50/50.

↓
Conclusion arithmetically decidable from the premises.

7. THE HISTORICAL/BIOLOGICAL ORIGIN OF FORMAL REASONING

I suggest that the human brain, like the animal brain is conditioned by sexual division of labour. Men desire quantity (*general usefulness*, called "exchange value" by **Karl Marx**), thus they inseminate as many women as possible, woman desire quality (*particular usefulness*, called "use value" by **Karl Marx**), thus they desire to preserve themselves until they've raised a few children to the age of grown-ups. This, combined with scarcity of resources, is the biological origin of markets. Now if those who seek general usefulness don't offer particular usefulness to the other sex, they won't reproduce. If those who seek particular usefulness (their own survival) only offer particular usefulness to others, they won't make the species reproduce either. Or at least this is the case for non-conscious animals.

The ability to produce useful objects is called "labour", the ability to produce general usefulness is called science (or *general labour*) by **Peter Ruben**. Thus women (**Emmy Noether** for instance) are the born scientists and men the born workers, regardless of hegemonic gender roles. (There are exceptions, males with a female brain, and females with a male brain, but for obvious reasons they won't reproduce.) There are five types of inference: *induction, abduction, deduction, falsification, and dialectics*. The first two inference types are "synthetical a posteriori" and are linked to brain types. Men are more practical and use reasoning by abduction (in the sense of **C.S. Peirce**) and woman more theoretical (they use inductive reasoning to generate new general rules.) In order to allow the brain to help reproduce the species, it is absolutely NOT required, that the thinking be "truthful" (since the more "successful" information will be chosen by the evolutionary selection process, regardless of truth content). Inductive and abductive reasoning produces information, not truth. On the other hand, formal (truthful) thinking cannot expand our information about the world (what is contained in the conclusion is already contained in the premises), thus it wouldn't be evolutionary selected, were it not by an altruism-friendly nurturing environment. Formal reasoning is a sacrifice to a higher goal of integrative meaning, since, in thermodynamical terms, it is a waste of energy. (It produces a higher order, but not on the level of the individual's goals.) The conscious development of formal reason is the true cause of our "human condition" (as outlined by **Julian Jaynes** and **Jeremy Griffith).** As men began to think formally during the "Greek miracle", the period originating our occidental societies, female induction was devalued. Although formal reasoning has no evolutionary advantage (particular or general) in itself, it can be used as a "second" selection process superimposed on synthetic induction and abduction in order to get rid of inconsistencies.

8. THE LAWS OF FORMAL REASONING: ON QUALITIES AND RELATIONSHIPS

What cannot be denied according to the mathematician **Bernard Bolzano** is that "I have ideas [Vorstellungen]". Things necessarily *appear* to be in a certain way to me. The world is **quality** (apparition) and **relationship** (appearance), which may be quantitatively/modally judged.

8.1 Semiotic consistency (Law of Identity - Necessity)

The Law of Identity States that everything is identical to itself in respect with its name, except for the number Zero, which is indicated by an absence of name. This identity of name is also called the identity of quality := $\{x\} \equiv \{x\}$ which is different from a mere identity of quantity (operation), for instance $\{+\} + \{+\} = \{++\}$, identity of modality (truth value) and identity of relationship. Within every formal system that presupposes the law *Sufficient Reason*, an equation of the form $\vdash 0 = 0 \leftrightarrow \vdash 0 \neq 0$ may be inferred. **Proof:** The function "Establish the difference between two identical terms: $y = \{x\} - \{x\}$" is construed such that it has the nameless (Zero) as output. Whatever the difference between two identical terms may be, it cannot be the difference between two identical terms, because there is no difference between two identical terms. The difference of two identical terms is thus different from itself. Therefore, the number zero is unconceivable, even by comparison with infinity. The infinite may not be representable in a finite calculus, however it can possibly be represented in an infinite calculus. The infinite is a self-contradiction, whereas the number zero is self-different. The sign of *semiotic necessity* is "$\equiv$". The feeling associated with semiotic necessity is **guilt**.

8.2 Syntactic consistency (Law of Contradiction - Contingency)

> A and Not-A cannot both be present. Not (A & Not-A).

Syntactic consistency is essential to **function-object-structures** such as "**e = mc²**". These are objects evaluated through mathematical functions. Since there cannot be an endless chain of argumentation

in mathematics, functions are all based on the 6 **axioms** of addition := [{x}R{+} = {x+}] & [{x+}R{y} = ({x}R{y}){+}]; multiplication := [{+}R{y} = {y}] & [{x+}R{y} = {x}R{y}+{y}]; and potentiation := [{x}R{+} = {x}] & [{x}R{y+} = {x}R{y}*{x}]. Functions play a role in **calculating** and **producing**. Such tautological assumptions are true by definition, not only under certain circumstances. The sign of *syntactic contingency* is "$\rightarrow$". The feeling associated with syntactic contingency is **fear/desire**.

8.3 Semantic consistency (Tertium non Datur - Impossibility)

A and Not-A cannot both be absent. Either (A or Not-A).

Semantic consistency is essential to **argument-predicate-structures** such as **"![e=mc²]"**. These are relationships-expressing propositions evaluated through empirical verification/falsification. In other words, these are **hypothetical,** not **categorical** assumptions, they are true under certain conditions. They play a role in **debating** and **commerce**. Let «'e=mc²' is necessary» be defined as **name** of the judgment that e=mc². I can then make the judgment «'e=mc²' is necessary» if and only if the name «'e=mc² is necessary» is identical with the necessity of the proposition that e=mc². However «[ ] is necessary» is **not** (!) a complete proposition, only the name of a proposition, and thus cannot express a judgment. But neither is the previous proposition an *arithmetical theorem*, as its translation into arithmetic produces an incoherent assertion: If we attribute the probability value **1** to all necessary Statements, and **0** to the impossible ones, we get the impossible equation **1 = 0**. The sign of *semantic impossibility* is "$\neq$". The feeling associated with impossibility is **sadness**, which seeks **meaning**.

8.4 Pragmatic consistency (Sufficient Reason - Possibility)

A' > A. The Statement that expresses the relationship "A'>A" is both consistent and complete. It cannot be inconsistent, because the two relata are identical, thus their relationship is not hetero-referential. But it cannot be incomplete (tautological) either because the relationship of the two relata indicates that one quality is greater than the other. Under the notion of *Identity*, we related two **qualities** by judging them *qualitatively.* Under the notion of *Contradiction*, we related a quality to a quantity by judging it *quantitatively*. Under the notion of *Tertium non Datur*, we related the **relationship of modality** to the **relationship of quantity** by judging them *modally*. Under *Sufficient Reason,* finally, we relate **qualities** and **quantities** and judge them *relationally*. **Capital** is, on one hand, **pure relationship** (*information*), on the other hand, **pure relatedness** (the *useful object*), and also, and on a deeper level – the **relationship between the two** (*intersubjective exchange*). However, information is superior to owning objects. <u>Proof:</u> The Price Statement "This commodity is worth X" entails the **performative contradiction** "This commodity is worth less than X" [although I pretend it's worth X]" (otherwise it would not be sold), but is not inconsistent or incomplete. The sign of *pragmatic possibility* is "**=**". The feeling associated with equivalence/possibility is **happiness.**

ANNEX 1: THE LAW OF VALUE ACCORDING TO EGMONT KAKAROT-HANDTKE.

Money enters the economy in the form of debt and is eliminated from the economy by the redemption of debt. This assumption is as basic as the semiotic tautology 0 = 0 – since it corresponds to the accounting identity where someone's assets are equal to another person's liabilities ("person" may also be a legal person in this context). "In his 2011 book *Debt: The First 5000 Years*, the anthropologist **David Graeber** asserted that the best available evidence suggests the original monetary systems were debt based, and that most subsequent systems have been too. Exceptions where the relationship between money and debt was less clear occurred during periods

where money has been backed by bullion, as happens with a gold standard" (Source: https://en.wikipedia.org/wiki/Credit_theory_of_money). Conceiving money in another way would be self-contradictory, as is, for example, **Karl Marx** explanation of surplus value – it suffers from *methodological individualism*, looking only at the profit of the individual firm versus wages paid. According to **E. Kakaroth-Handtke**, the business sector's profit is always equal to the household sector's dissaving over a given period of time: "Dissaving means profit and saving means loss. With dissaving (that is not compensated among the households) the household sector's credit expands, with saving/redemption credit contracts. Since credit has to be fully repaid it is again zero at the end of the whole process. By consequence, profits and losses cancel out in the process for the business sector as a whole – not, of course, for individual firms. No matter how long it takes, the household sector's credit expansion must be reversed some day. The final turning point is fatal for the economy. At this point profit for the business sector as a whole turns into loss and the economy – slower or faster – breaks down" (**Egmont Kakarot-Handtke.** *Mathematical proof of the breakdown of capitalism*. University of Stuttgart, 2014; http://mpra.ub.uni-muenchen.de/52910/; 26.11.2021).

(0) AXIOM 0: There is an economy consisting of a household and a business sector.

(1) AXIOM 1: $Yw = WL$. Wage = wage rate * hours of work

(2) AXIOM 2: $O = RL$. Output = productivity * hours of work

(3) AXIOM 3: $C = PX$. Consumption expenditures = price * demanded quantity

(4) Condition 4: $X = O$. Market Clearing

(5) Condition 5: $C = Yw$. Budget balancing

(6) From (3), (4) and (5): $Yw = PO$
(7) From (6): $P = Yw/O$
(8) From (1), (2) and (7): $P = W/R$
(9) From (8): $W/P = R$. *LAW OF VALUE:* Real salary = productivity

ANNEX 2 : THE VALUE OF LAWFULNESS – WHY DO MATHEMATICIANS WORSHIP CONVENTIONS SO MUCH? DIGRESSIONS ON GAME THEORY.

I have for a long time asked myself the question why mathematicians, loosely appealing to Gödel, worship conventions and authority arguments to the degree of declaring that truth itself needs to be considered a convention – by assimilating the proximate notions of «axiom», «definition» and «rule of inference» to the single notion of «convention». In my view, the fact that there is a part of mathematics which is provable and another part of mathematics that rests on beliefs or immediate intuitions does not justify this reductionist attitude which dismisses the individual's freedom of choice.

There is a branch of mathematics exclusively dedicated to studying conventions, not as an epistemological founding of the entire discipline, but rather as a subject matter of mathematics – game theory, which specifies itself into the theory of cooperative and non-cooperative games. There is nothing to object to the purely mathematical (calculating) part of game theory, while the interpretations of those calculations are often philosophically very weak. According to me, it is not some weakness of reasoning of mathematicians which has produced this deplorable situation, but a general property shared by the majority of them: mathematicians are educated by professors who get their salary from the State, and the State is vigilant to assure that the tolerated interpretation of scientific facts does not object to the legitimacy or even the existence of the nation-State.

Theoretically speaking, for a rationally selfish person, it would be preferable to never cooperate within the prisoner's dilemma. Empirical studies, however, have shown that real humans have a

certain tendency to spontaneously cooperate. How should this gap between theory and praxis be explained? In my view, two paths of interpretation are open. Either you believe that the factual existence of cooperation is some sort of "paradox", since cooperative behaviors cannot be inferred from the supposed selfishness of agents. The second path is to say that cooperation is a "tautology". In that case, you suppose some sort of altruism (which is itself nothing else than a "tendency to cooperate") which explains cooperation. Mathematicians educated by the State, however, have systematically chosen to regard cooperation as a "paradox". In that case, the government is a "deus ex machina", which guarantees the stability of human relationships. However, this is not logical. If ordinary human beings are bad and selfish by nature, in what sense would it be preferable to hand over authority to a government itself constituted by selfish politicians? Is this not rather dangerous?

It is the individual's choice to cooperate or not to cooperate, in no way restrained by a "human nature" profoundly non-knowable which determines the face of social institutions, and not the other way around. And the individual choice to believe in a "axiom", a "definition" or a "rule of inference" is not made less arbitrary if everyone thinks in the same way. As demonstrated by C. S. Peirce in the essay "On the fixation of belief", conventions, far from being the non-questionable presuppositions of science, are rather the goal of scientific inquiry – if nobody doubts anymore the truthfulness of a theory, it is impossible that it could get any better. The absence of real doubts is sufficient to satisfy our scientific curiosity, and not some "absolute truth". Sadly, many mathematicians of our days seem to believe that the authority argument is such an "absolute truth", which is in fact a medieval attitude and against enlightenment. The mathematician **James Lindsay** talks about this on YouTube.

ANNEX 3: MAKING SENSE OF KURT GOEDEL, KARL POPPER AND G.W.F.HEGEL

Analytical philosophy is plagued by paradoxes that it cannot resolve because it conflates two kinds of negation, the necessary-that not-Negation and the not-necessary-that-Negation. This should make us have a second look at the **Hegelian** system, but now through the eyes of **Kurt Gödel**'s critique as well as the philosophies of **Karl Popper** and **Ludwig Wittgenstein**, **Carl G. Hempel** and **Paul Oppenheim**.

> *"Independently of Hegel's primitive terms [which begin with being, nothing and becoming], the process is not in time nor an analogy with history. It is right to begin with being because we have to have something to talk about. But becoming should not come immediately after being and nothing: this is taking time too seriously. It is noticeably clear that possibility is the synthesis between being and nothing. It is an essential an natural definition of possibility to take it as the synthesis of being and nothing. – Possibility is a weakened form of being."*
> - **Kurt Gödel,** In: H. Wang: A logical Journey, from Gödel to Philosophy, Cambride, Massachusetts 1996

(1) !(S/P) **necessary** (Hegelian 'Being'); for instance: "'Snow is [always] white".

    (A) : Necessary-that-not-Negation (with Law of Contradiction)

(2) $\sim$(S/P) **impossible** (Hegelian 'Nothingness'); for instance "Snow is never white".

    (B): Not-necessary-that-Negation (without Law of Contradiction)

(3) from (2B) $(\sim(S/P)) \to (!(Q/R))$ **=** $(\sim(Q/R)) \to (!(S/P))$ =: **contingently impossible = possibly necessary = possible.**

(4) from (3A) $(!(S/P)) \to (!(Q/R))$ =: **contingently necessary = possibly impossible = contingent**

(5) from (4B) $((!(S/P))) \to (!(Q/R) \to (!(T/U))$ =: **contingently contingent**

(6) from (5A) $((\sim(S/P)) \to (!(Q/R)) \to (!(T/U))$ =: **contingently possible**

(7) from (6B) $(((\sim(S/P)) \to (!(Q/R)) \to (!(T/U))) \to (!(V/W))$ =: **contingently contingently possible**

(8) from (7A) $((((!(S/P)) \to (!(Q/R) \to (!(T/U))) \to (!(V/W))$ =: **contingently contingently contingent**

(9) from (8B) $((((!(S/P)) \rightarrow (!(Q/R) \rightarrow (!(T/U))) \rightarrow (!(V/W))) \rightarrow (!(X/Y)) \dots$
ETC.

The not-necessary-that-Negation produces ever more complex dialectical syntheses out of its basic concepts. The necessary-that-not-negation flips back and forward between two mutually exclusive propositions. Note that it does not matter whether a "contingentisation" is caused by a semantic change in *concept definition* (as **Ludwig Wittgenstein** would have it) or a **Karl Popperian** *modification of hypothesis*[1]. 'Necessity', 'not', 'implication' and 'and' are the four asked-for primitive concepts which cannot be further analysed but must be presupposed by any logic, analytical or dialectical. For example, the non-exclusive "or" is defined as: necessary-that-not-(not-a & not-b).

SM alias "Dr. Wintermute"; Berne/Geneva, Switzerland, Revised Edition, 12.07.2022

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[1] According to **Karl-Otto Apel**, we can speak of an *uncertainty relation* (similar to the uncertainty relation in quantum mechanics) between **hermeneutics/humanities** and **natural science**: either we **presuppose** the validity of a **particular case**, then we learn nothing about particular cases, only about general rules, or we **presuppose** the validity of a **general rule**, then we learn nothing about general rules, only about a particular case. Comprehension and explanation are thus "complementary" (**Karl-Otto Apel.** *Transformation der Philosophie* 2).