A Theoretical Critique of Theory

Author: Alex Patterson

Abstract

This paper uses its own peculiar lettering system for each paragraph.
This paper proposes an overall solution to Godel's incompleteness theorem and the Gödel sentence. Both are handled as one, by using Gödel numbers as the exemplary objects of incompleteness.

New terms and tools are introduced for quantification that creates a more synthetic (logical, reasonable, coherent) intervention and inter-weaving into these now classical problems of the assumptions in the Gödel material and literature. Asymptotes are used within vertical and horizontal graphs to justify a *future* that need not be seen as a future in the sense of grammatical future-tense, but as a potential part such systems themselves that we deal with respect to incompleteness.

The thesis is that we can approach incompleteness by using theoretical reasoning and available tools that are allowed in theoretical reasoning to critique the very theory of incompleteness itself. That is the essential Abstract Thesis. It will be seen that a real attempt is attempted.

a. “Wittgenstein questions the intra-systemic and extra-mathematical *usability* of *P* in various discussions of Gödel in the *Nachlass* (Rodych 2002, 2003) and, at (§19), he emphatically says that one...

ab. ...cannot “make the truth of the assertion [‘*P*’ or “Therefore *P*”] plausible to me, since you can make no use of it except to do these bits of legerdemain.”

ab. By which he means ⊢ **as** '*P*' **and** ⊨ as "Therefore *P*". He's referring the whole matter of Russell's Paradox to PM before accepting a possible put-on. More than that, skepticism guides one to a re-fresh. I take it to be:

b. An incomplete piece of information ⊢ *P* is encoded in the system where it is, and where it is true but not provable; one has to ask, 'which is it first?'

bb. If the encode really *must* be arithmetic (there is nothing in logical necessity that commands it to be),it was/is-still an arbitrary choice. It was chosen because it is amenable to symbolic translation in lists and by procedure.

c. (At any rate, the most elementary accepted encode symbol for a Gödel number is s#.)

ad. Where is the mistake in the mess? s# is obliged to act as a function word does: the Gödel number is a syntactic unit, not master-class sub-study in the mathematical logic or the relevance of mathematics of the foundations of mathematics, it is not an oeuvre! It becomes a master-class, an oeuvre, when we have *the power of facing*, as it has been called. This is commentary, but it is important and guiding commentary.

adb. s#.f is something which is meaningless (devoid of semantic value) until it takes a value x, which looks like this: s#.fx. When listed like this it is a decoded Gödel number qua s#.fx following a universal Turing syntax rule: <s#.f add-x>. In which case a decoding is likely to take place with s#.f. It is not furtive to state that it is a transition from one state of something to another, if not to another object altogether, or dropped into a different system entirely, altered or not: yet it is transparent that in whatever form it "drops thru" it *will* be into a form or structure of generic or expressive representation of modus ponens. The possibilities in which this may happen are many and perhaps contingent, or finitely ruled, this said without discussing infinity and counting. It would not be natural to think it 'becomes provable,' but that 'it's proven.' That is already syntactical sort of induction.

ad.' Whatever the case, modus ponens is emergent, or emerges, or is 'kicked-in' by a mechanism or that is likely not causal but more in the domain of a kind of 'decaying' chain reaction, which is not causal. The other message is that the Gödel-syntax is traced-out (possibly leaving a trace as in or analogical to trace grammar in Government and Binding transformational grammars), and what remains a unique instance of an "set-theoretic 'existence / witness and disjunction property" triggered-in. In respect of which indeed we would have a new object, object Q, [P having been manhandled enough, and in-waiting in a future not provided for by Gödel or his material, with respect to asymptotic graphs of expansion or contraction, as will be seen below. (Something is punctuated: something is not the negation of [not provable, but the assertion of [proven. This whole matter points to an necessitated and partly inductive mathematical emergence into mathematics of a completely new way of thinking about information and what happens to it qua provability and truth within a syntax, and without it, in all manners of it. The Godel number or encode sign s#.f would drop-thru by the time having come for the asymptotic finiteness of 'add-x.'

adbb. That seems very clear: that [qua drop-thru from T to logical state [logical syntax of MP (modes ponens). Syntax is traced out as semantics is traced into it, qua an anagogic mode transformational grammars, Dependent or Constituent Header theories.

adbbb. What remains is a unique instance of a "set-theoretic property of existence and disjunction" by induction or exclusion. This 'new' PM P, or PM P' has drawn a Euclidean theorem-line to a real proposition, in the form of a wff, via the pseudo decide-rule of add-x, i.e. *affected* Gödel #s.f. It is seen to be that which it was/is/has-been in-waiting along a horizontal asymptote: N = M, something different due the punctuation by the '[is proven (not [is provable, a mere possibility at this level, not an actionable item as is the case with s#.f) and counted ([add-x) information qua provability-decidability within that syntax, to a 'new' "proposition PM P'," that is to say, “Q”.

adbbbb. We would like to say that the Gödel number s#.f draws a function fx that is infinite as it approaches a (syncategorematic: function-valued syntax) value *c* = s#f.x, where x=*c* and at x=*c* enables a ***putative* vertical asymptote**. Putative because function-values, i.e. values within a syntax that is syncategorematic and not quantificational haven’t been tested in mathematics, at least at this desired level. It stands to reason in certain circles that mathematics is in any case a syntax. If so, it would also stand to reason that syntax is in no need of quantification by the two quantifiers, E and A, but only in its (grammatically derived, and syntactical syncategorematic function words): AND and OR connectives, and the syncategorematic operator NOT, the non-syncategorematic arguments P, Q, Y . . . is discontinuous at a value x=*c*.
A graph for the function y=1/x appears as a syncategorematic vertical asymptote: x=*c* of the graph y = 1/x, as x approaches *per definition* a discontinuous value c at x=*c*.

d. We started with incomplete ‘P’ lacking entailment “Therefore P,” and saw it encoded it as the universal Turing rule for a Gödel number – an encoded, or stored incomplete piece of information, i.e. a piece of information that is not expressive. It is by all possibly thinkable lights a syncategorematic item, arithmetically assembled or compiled in a (possible list of) function words (or simply a function word, pick any one or more and add), by implication or induction, that are already in that syntax already carrying many different strings or trees or what have you of semantic units, i.e. meaningful expressions.

dd. Or, qua the same process, it might disappear and be subsumed in an unidentified syntax, a syntax that has just then started for the first time; if that is its gate, then that will always be a gate that can be drawn, so long as our present state of mathematics and logic is such as it is now.

e. If there is container, or a domain, or a something that I can name and it has institutional meaning, i.e. it is a social entity that people purposely engage in for specific needs, and I am saying something about while engaging in it with it, partaking of its gifts, its use(s) as spelled out by the community and itself, then what I say in it can be true in it, but if I am saying something negative about it, something criticizes its existence, and by extension its use, what I am saying is not provable as long I communicate my criticism of it by the use of its media, in effect accepting that it has provided something that I can criticize only because it has become necessary to my needs. Then my criticism is not provable: I am saying something true, if my criticism is accurate, but I am contradicting myself by not being able to prove it, in fact the very telling of this truth is the act of negating a proof. So my act of saying P negates PRF.P. If I consider that I am speaking not in a container or domain, but in a bound world of universal syntaxes, the question to me is, 'which syntax am I using,' and 'is it listed or indexed,' and 'what am I to do with this *constitutive*, i.e. socially enabling thing, that I am engaged in using right now.' Should I question my syntax? Must I question my syntax? Between these two questions seems the only way to stop this stacking-up that I could continue qua what Gödel's incompleteness theorem/proof itself declares, but mind you declares outside of itself when discussing the philosophical matter of at all. I.e., in the real life where we are talking about Gödel's resolution to the Russell's paradox itself. Assuming we are still seriously considering the matter at all, which would at that point seem surprising if it is a sunny day out after a long rainy season, the difference between the 'should' and the 'must' reflection is perhaps the answer. And it is here that we can stop: they are both modal verbs, i.e. auxiliary / helping verbs, one comes in the form the necessary course of action based on the Yes OR No answer to the question, the other allows you to further critique your yes or no answer. Ah, but why are we still compelled to go on? It's the critical point: in PM we a computational algorithm to answer these questions. Outside of PM we do not! This leads to stacking questions, answers, and recursion, all in one the form the other, as the case may be.

I propose an answer to this. The add-x rule has still not stopped us. We have to question over whether we are working in a domain, a container, or at the most liberal, in an indexed or listed syntax amongst a potentially infinite number of available and accessible syntaxes (not an unwholesome assumption at all, just look at dependency grammar, constituency grammar, lexicalist-hierarchical X-Bar Heading versus linear X-Bar Heading, and try to count the number of possibilities in their various forms and worked-out "stemmings," and all you will find is an un-answering horizon that suggests infinite combinations and mutability, but at any point in time, at the time of asking, as of now, you can predict only that there is may might be a computation algorithm to calculate their present state of that which is combined now and their progression, and that that algorithm will have real decidability power and authority to detect whether these theories are at this time in a finite state or are in a progressive state, and that it is capable of determining when is now, etc., etc. That this prediction occurs when looking down on and examining Gödel's incompleteness theorem is fair, since it is asking the question as to whether based on what we know outside of a possible syntactical limit or domain, is there an computational algorithm. But this does take into account and admit the lack of a proof for an encoded P, since we are still questioning. This can be answered and an end put to the rigor of what is otherwise willy-nilly: will-ye, nil-ye is the rigor of the questioning, the answering, and the recursion, of the positing of indexes and listings, and the possible potentiality to grab on to them and make a hit, so to speak: since to end the infinite loop it would require a "one-shot, one-hit". This is possible. Take s#.f, we don't have sufficient information about it to take it to proof, whether proof by observation or proof by axiom-theorem. In the future we will. At that point, we come back to the beginning of this paper and say that s#.f will make a “fall-through” into PM as the rule add-x, i.e. add semantics, i.e. add missing information, and click into modes ponens as a result, which is proof enough. Observing this may very well be a part of the fall, but it will definitely be a part of the modus ponens, since we will recognize our beloved, and cry hurrah! Let’s get to work. And look at the work we’ve done that has added to modus ponens! Let’s work! P was the antecedent to all of this! It dropped through in the *future* as Q. We can say that if Qy, Py! The direction is correct! We’ve derived the in the fall-through the antecedent-consequent with its great mate, the witness and disjunction property.

ee. This

> Observing this may very well be a part of the fall, but it will definitely be a part of the modus ponens, since we will recognize our beloved, and cry hurrah! Let’s get to work. And look at the work we’ve done that has added to modus ponens! Let’s work! P was the antecedent to all of this! It dropped through in the *future* as Q. We can say that if Qy, Py! The direction is correct! We’ve derived the in the fall-through the antecedent-consequent with its great mate, the witness and disjunction property

still needs work, but is complete for the purposes here. It will be handled in a later paper where we can use complex numbers in basic intuitionist sets to generate copies of the sets' members, i.e. a member A gets a copy A' by virtue of 'the rules' of intuitionist sets. This will be seen to be handled within partly Bayesian means, but not in any way wholly so.

f. At this point both [p and [therefore p would have been acceptable to Wittgenstein

g. The idea is, of course, that syntaxes permeate the social world of *the constitutive,* the enabler of community and human institutions.

e. If English had been a proto-Indo-European language the common phrase that we use, "of course," would be all we would need to immediately start building a civilization.