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THE ROOTS OF WITTGENSTEIN'S ANALYTICITY

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Abstract – Although original, Wittgenstein's notion of analyticity presents characteristics that can be traced back to Leibniz's and Kant's accounts of analytic claims, or so I argue. Specifically, they pertain to (a) Leibnizian identities consisting in the connection of the *P*-term with the *S*-term (its *inclusion in the S-term*); and (b) the Kantian containment (cf. Anderson 2015) that dismisses Leibniz's metaphysical ground and shifts analyticity and *a priori* truth toward semantics. Accordingly, Wittgenstein's account of analyticity (1967) seems a development rather than a rejection of (a) and (b). It turns Leibnizian identities into tautologies and (later) the Kantian *a priori* into a grammatical rule (cf. Baker-Hacker 2009) showing how an intelligible description of reality *ought* to be (cf. Glock 1996). Therefore, I conclude that Wittgenstein's account of analytic claims as tautologies and semantic rules furthers the notions of identity and apriority developed by Leibniz and Kant, respectively.

Wittgenstein's notion of analyticity seems *prima facie* to share little or nothing with the others. It instead presents original characteristics irreducible to anybody else's account. However, as discussed by Wittgenstein (1922, 1953, 1967, 1969, 1974), (a) analyticity derives from Leibnizian identities and consists in the connection of the predicate with the subject (its *inclusion in the subject*). Leibniz, though, presupposes the existence of a perfect substance (monad) whose properties are all intrinsic. (b) Later, Kant dismisses this metaphysical ground and shifts analyticity and truth toward semantics, relying on the notion of containment (Anderson 2015). Nevertheless, he identifies a class of *non-tautologous analytic judgments* (Dreben and Floyd 1991), namely *the synthetic a priori*, largely rejected since Frege (1884).

Notwithstanding, Wittgenstein's account of analyticity seems a development rather than a rejection of (a) and (b), or so I argue. Indeed, it turns Leibnizian identities into tautologies (e.g., ' $\sim(p \cdot \sim p)$ '), and (later) the Kantian *a priori* into a grammatical rule. The nature of reality does not determine grammatical rules, which, instead, are constitutive of that nature (Baker-Hacker 2009). The proposition "white is lighter than black" (RFM I-105), for instance, expresses *internal relations* between concepts (of color) and accordingly licenses the transformation of empirical propositions. It thus shows how an intelligible description of reality *ought* to be (Glock 1996). Therefore, I conclude that Wittgenstein's account of analytic propositions as tautology and semantic rule furthers the notions of identity and apriority developed by Leibniz and Kant, respectively.

I – LEIBNIZ'S IDENTITY

The current notion of analyticity derives from Leibniz. In any true proposition, "the predicate or consequent is always in the subject or antecedent" (*Primary Truths*, 31). True propositions are analytic by default: "the notion of the denominated subject must contain the notion of the predicate" (Bennett 3). In this definition consists "the nature of truth in general, or the [true-making] connection between the terms of a statement" (Ibid), meaning the *S-term* and the *P-term*. "In identities, the connection of the predicate with the subject (its

inclusion in the subject) is explicit; in all other [true] propositions it is implicit, and has to be shown through the analysis of notions" (Ibid).

Leibniz therefore assumes (but doesn't prove) all truth is resolvable to identities. All true propositions are instances of identity. "First truths are the ones that assert something of itself or deny something of its opposite" (2). For example, "A is A," "A is not not-A," "if it is true that A is B, then it is false that A isn't B (i.e., false that A is not-B)". Also, "everything is as it is", "everything is similar or equal to itself", and "nothing is bigger or smaller than itself."

Others of this sort follow. Further, "all other truths are reducible to first ones through definition, that is, by resolving notions [into their simpler components]" (Ibid). Leibniz exemplifies this reduction. Consider the axiom *a whole is bigger than its parts* or *a part is smaller than the whole*. Leibniz neglects the infinite compositions of parts, for which the axiom fails. Hence, we need to introduce a restriction, '*whole*' stands for '*finite compositions*' only. After that, we can follow Leibniz and prove the axiom by relying on the definition of 'smaller' or 'bigger' together with the axiom of identity. Here is the argument.

1. For x to be <i>smaller than y</i> is for x to be equal to a part of y (which is bigger)	Definition of 'smaller than'
2. Everything is equal to itself (axiom of identity)	Axiom of 'identity'
3. A part is equal to itself	2
4. A part is equal to a part of the whole	3
5. A part is smaller than the whole	1, 4

"For the *less* is that which is equal to a part of the other (the *greater*)" (1989: 31) is easy to grasp. People "take away from the bigger thing something equal to the smaller one, and find something left over" (Bennett 2017: 2).

For Leibniz, analyticity entails apriority in two ways. (a) Reducing all truths to first ones by resolving them into their simpler components "is giving an *a priori* proof, a proof that doesn't depend on experience" (1). However, the independence advocated by Leibniz remains vague. It could be independence from 'further' or 'all' experience. The proof could thus be 'relatively' or 'absolutely' *a priori*. Leibniz offers no clarification. (b) Despite this vagueness, it's clear that the "*a priori* demonstration rests on" (2) the analysis of the propositional terms. The same holds for derived and primary truths as well. "This is true for every affirmative truth – universal or particular, necessary or contingent – and it holds when the predicate is relational as well as when it isn't." (Ibid)

All truth, therefore, derives from the analysis of identities whose components or notions (S-term and P-term) are related by inclusion (or containment). Otherwise, "there would be a truth that couldn't be proved *a priori*, that is, a truth that couldn't be resolved into identities, contrary to the nature of truth, which is always an explicit or implicit identity." (2)

The semantic notions of analyticity and truth lie on a metaphysical ground. Leibniz presupposes the existence of a perfect substance (monad); whose properties are all intrinsic. "There are no purely extrinsic denominations [relational properties] – that is, denominations having absolutely no foundation in the denominated thing". (3) Relational (extrinsic) properties are grounded in non-relational (intrinsic) properties. As Bennett suggests, this "implies that every relational truth reflects non-relational truths about the related things." (4) "The complete [perfect] notion of an individual substance," clarifies Leibniz, "contains all its predicates – past, present, and future". (3) "If a substance *will* have a certain

predicate, it is *true now* that it will, and so that predicate is contained in the notion of the thing.” (Ibid)

II – KANT’S CONTAINMENT

Kant conceives epistemic necessity as follows, “*p* is knowable *a priori* if and only if it is knowable independently of all experience.” His sketchy argument appears in the first *Critique* (1781 and 1787).

In all judgments in which the relation of a subject to the predicate is thought (if I only consider affirmative judgments, since the application to negative ones is easy), this relation is possible in two different ways. Either the predicate *B* belongs to the subject *A* as something that is (covertly) contained in this concept *A*; or *B* lies entirely outside the concept *A*, though to be sure it stands in connection with it. In the first case, I call the judgment analytic, in the second synthetic. (A6-7)

Frege (1884) challenged this notion of containment (Anderson 2015) and reviewed the synthetic-analytic distinction. Moore and Russell accepted Kant’s distinction but dismissed his consequences, namely the class of non-tautologous analytic judgments (Dreben and Floyd 1991), that is the synthetic *a priori* judgments. For Moore and Russell, “all purported analytic judgments are mere tautologies, and hence not judgments at all” (27). Later, Quine (1951) radically rejected the synthetic-analytic distinction, including a few of its entailments. Unlike Quine, Putnam (1979) believes that defensible notions of analyticity are available. Nevertheless, it is not the case that they entail apriority.

After Kant, many adopted the notion of *a priori*. Schopenhauer and Hertz, for instance, “explained the *a priori* elements of science by reference to structural features of the way we represent objects.” (Glock 1996: 199) Their account influences Wittgenstein. His *form of representation*, ‘standpoint’ from which we picture the world, echoes the Hertzian forms of describing the world, which lead the scientific theories. Although imperfect, Glock’s analysis is mostly correct.

Kant distinguished between ‘formal logic’, which abstracts from the objects of knowledge, and ‘transcendental logic’, which investigates preconditions of thinking about objects. The former consists of analytic *a priori* truths. But there are also synthetic *a priori* truths in mathematics, metaphysics and the *a priori* elements of science. They hold true of experience (are synthetic) without being made true by experience (are *a priori*), because they express necessary preconditions of the possibility of experience. (199)

III – WITTGENSTEIN’S TAUTOLOGY

Wittgenstein furthers the Kantian notion of apriority and includes all grammar, namely “the system of rules which provide standards for the correct use of words, as our ‘method’ or ‘form of representation’.” (Glock 1996: 129) “...A meaning of a word is a kind of employment of it. For it is what we learn when the word is incorporated into our language.” (OC 61) “That is why there exists a correspondence between the concepts ‘rule’ and ‘meaning’.” (OC 62)

This sample [sepia] is an instrument of the language, by means of which we make colour statements. In this game, it is not something that is represented, but is a means of representation. – And the same applies to an element in language-game when we give it a name by uttering the word “R” – in so doing we have given that object a role in our language-game; it is now a *means* of representation. [...] It is a paradigm in our game; something with which comparisons are made. And this may be an important observation; but it is none the less an observation about our language-game – our mode of representation. (PI 50)

The semantic signification complies with this game. "Now what do the words of this language *signify*?" (PI 10), asks Wittgenstein. "So, the expression "this word signifies *that*" would have to become a part of our description. In other words, this description ought to take the form: "the word ... signifies ...". (Ibid)

In the *Tractatus*, Wittgenstein restricts the notion of *apriority* "to the analytic truths of formal logic, while rejecting the idea of synthetic a priori truths." (Ibid) "Necessary propositions," clarifies Glock, "reflect the conditions for the possibility of empirical representation." (Ibid) Wittgenstein replaces the cognitive normativity of Kant with the logical syntax, namely "the system of rules which determines whether a combination of signs is meaningful." (Ibid) Notwithstanding, he maintains the characteristics of that normativity. Like this latter, logical syntax precedes truth and falsity. No empirical propositions can overturn it. As Glock argues, "the special status of necessary propositions is not due to the abstract nature of their alleged referents, for there are no logical constants or logical "objects." They aren't statements about objects of any kind, but reflect 'rules of symbolism'." (Ibid) "That one empirical proposition is true and another false is no part of grammar." (PG 88) Grammar itself is not subject to empirical refutation.

"The only correlate in language to an intrinsic necessity is an arbitrary rule," states Wittgenstein; indeed, "It is the only thing which one can milk out of this intrinsic necessity into a proposition." (PI 372) "Grammar is not accountable to any reality. It is grammatical rules that determine meaning (constitute it) and so they themselves are not answerable to any meaning and to that extent are arbitrary." (PG 133)

In this sense, all necessary propositions of logic can never be false. Understanding their sense equals to recognizing their truth. However, if this is the case, the truths of logic are all tautologies. They all say and repeat the same thing, e.g., ' $\sim(p \sim p)$ '.

For example, the fact that the propositions ' p ' and ' $\sim p$ ' in the combination ' $\sim(p \sim p)$ ' yield a tautology shows that they contradict one another. The fact that the propositions ' $p \supset q$ ', ' p ', and ' q ', combined with one another in the form ' $(p \supset q) \cdot (p) : \supset (q)$ ', yield a tautology shows that q follows from p and $p \supset q$. The fact that ' $(x) \cdot fx : \supset fa$ ' is a tautology shows that fa follows from $(x) \cdot fx$. Etc. etc. (TLP 6.1201)

The necessity of logical propositions depends on their bipolarity. In certain combinations, they display how the truth-falsity of elementary propositions cancels out. Propositions have two poles (T and F), which ultimately ground the logical structure of all languages. As for the rule, consider the case of the law of contradiction. This latter states a rule that prohibits an expression like ' $p \sim p$ '. The validity of the rule emerges from violations that imply a contradiction. However, it could not tell one what to do: "a contradictory proposition is no more a move in the language-game than placing and withdrawing a piece from a square is a move in chess" (Glock 1996: 90).

According to Kripke (1980), *a priori* is an epistemological category, *necessity* a metaphysical one, and *analyticity* a logical one (34-9). Wittgenstein's position differs. For him, necessity characterizes propositions of logic (e.g., those of the form " $\sim(p \ \& \ \sim p)$ ") and mathematics (e.g., " $7+5=12$ "), as well as analytic propositions, broadly conceived. This latter also includes classic definitional truths like (1) "All bachelors are unmarried." Wittgenstein seeks to preserve a connection between (1) and the meaning of the word "bachelor" (Kalhat 2008). Accepting (1) relies on verifying the meaning of "bachelor" and "unmarried", not the marital status of men (a conclusion rejected by Williamson 2007). Rejecting (1) betokens linguistic

misunderstanding rather than factual ignorance. As a grammatical proposition, (1) “standardly expresses a *rule* for the correct use of at least one of those constituents and thereby determines their meaning instead of following from it” (Glock 2008: 25). Therefore, (1) has a *normative status*: it can be used to explain “bachelor,” and to criticize or justify one’s use of that term, including its nonsense like “There is a married bachelor at the party.” This normative role of (1) explains its *necessity*. A statement such as (1) “cannot possibly be refuted by the facts, simply because no sentence contradicting it counts as a meaningful description of reality, one which is even in the running for stating a fact.” (Glock, *Ibid*) As Wittgenstein states, necessary propositions look very much like grammatical rules. They neither describe states of affairs, perhaps about a Platonic super-physical abstract, nor amount to empirical generalizations.

Further, Wittgenstein maintains that the rules of grammar are autonomous in a similar way to the rules of chess. Grammatical rules are not determined by the nature of reality. Instead, they are constitutive of that nature (Baker-Hacker 2009). A similar thesis holds for mathematical propositions (Dummett 1959; Marion 1998: 179). As Putnam clarifies, “to Wittgenstein’s view: when we make a mathematical assertion, say “ $2+2=4$,” the “necessity of this assertion is accounted for by the fact that we would not count anything as a counterexample to the statement. The statement is not a “description” of any fact, but a “rule of description” ... In a terminology employed by other philosophers, the statement is *analytic*.” (1979: 423-4)

I assume Wittgenstein derives this normative connotation of logic from Frege, who “regarded analytic truths as those which have a proof resting solely upon general logical laws and on definitions.” (Juhl and Loomis 2010: 15; cf. Frege, *The Foundations of Arithmetic* [1884], 1974: 4). Frege assigned the general laws of logic a special status as ‘guiding principles for thought in the attainment of truth,’ but added that we must distinguish two senses of ‘law.’

In one sense a law asserts what is; in the other it prescribes what ought to be. Only in the latter sense can the laws of logic be called ‘laws of thought’: so far as they stipulate the way in which one ought to think ... [They] are the most general laws, which prescribe universally the way in which one ought to think if one is to think at all. (Frege, *The Basic Laws of Arithmetic*, [1893] 1964:12)

For Frege, the laws of logic are likely constitutive of thinking since they are prescriptive or normative. “If we are to think at all, we must follow them. They are also universal, applying to every proposition in the most general way.” (Juhl and Loomis 2010: 15).

For Wittgenstein, the proposition “white is lighter than black” (RFM I-105), for instance, expresses *internal relations* between concepts (of color) and accordingly “licenses transformation of empirical propositions” (Glock 1996: 139). “It lays down what counts as an intelligible description of reality” (*Ibid*). The proposition “*a* is more than *b*” holding for non-independent but partially or wholly identical terms rules over all propositions about distinct objects and their external relations (Mácha 2015: 12-3, 87).

To say that it is logically impossible for a white object to be darker than a black one is to say that we would not *call* an object both ‘white’ and ‘darker than a black object’. Given our rules, it makes no sense to apply both terms to one and the same object at the same time. Wittgenstein explains logical necessity through the distinction between sense and nonsense drawn by our norms of representation. (Glock, 1996: 130)

IV – FINAL REMARKS

The early Vienna Circle (Schlick, Carnap, Weismann) welcomed two fundamental ideas of the *Tractatus*.

(a) Necessary propositions are all analytic; hence they express no knowledge of reality. Necessity derives from the combination of bipolar propositions that leaves out all factual information. The early Wittgenstein holds rules of logical syntax to show the essence of the world, namely its logical form. "The fact that the propositions of logic are tautologies shows the formal – logical – properties of language and the world." (TLP 6.12) Later, he abandons this view. For the positivists, necessary propositions are a priori but offer no knowledge about the world.

Logical truths are tautologies which are true in virtue of the meaning of the logical constants alone, and analytical truths can be reduced to tautologies by substituting synonyms for synonyms – thus 'All bachelors are unmarried' is transformed into 'All unmarried men are unmarried', a tautology of the form ' $(x)((fx \cdot gx) \supset gx)$ ' the truth of which follows from the meaning of the logical signs involved. Necessary propositions are true by meaning or convention. They either are themselves conventions (definitions) or follow from such conventions. (Glock 1996: 131)

(b) Metaphysical assertions are non-sensical pseudo-propositions. At best, they either assert what cannot be otherwise (e.g., "red is a colour") or denies what contravenes logic (e.g., "red is a sound"). Unlike Wittgenstein, logical empiricists, however, view semantic rules as arbitrary conventions governing the use of signs. Later, Wittgenstein will no longer condemn necessary truths as pseudo-propositions. Nevertheless, he will still consider analytic propositions (including the mathematical ones) as tautologies. However, they now mask grammatical rules, which ultimately deal with semantic conventions. Wittgenstein's account of necessity is thus conventionalist (see Glock 2010).

Later, Wittgenstein develops his form of conventionalism. Notwithstanding, he denies necessary propositions derive from meanings or conventions. They instead stand for rules (norms of representation) that *partially* determine the meaning of words. For example, to a tautology like ' $(p \cdot (p \supset q)) \supset q$ ' corresponds a rule of inference (*modus ponens*). Both the tautology and its rule further the notions of identity and apriority developed by Leibniz and Kant, respectively.

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