

Knowing the Form of all atomic Sentences in Advance?

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Abstract

This paper challenges the *communis opinio* surrounding *Tractatus Logico-Philosophicus* by Ludwig Wittgenstein through a series of eight theses that foreground neglected tensions in the text. Focusing on anomalies in Wittgenstein's exposition – apparent omissions, departures from expected frameworks, and striking implications – it develops an alternative line of interpretation centered on the role of propositional variables and the rejection of quantification. The analysis argues that Wittgenstein replaces predicate-logical resources with a system grounded in prototypes (*Urbilder*), thereby linking logical form to an ontologically structured conception of objects and their possibilities. This move yields a hybrid account in which propositional logic and ontological commitments are interdependent, yet not fully reconcilable.

The paper further contends that the demand to specify *a priori* all possible forms of elementary propositions generates a fundamental instability within the system. Wittgenstein's own acknowledgment that such forms cannot be exhaustively determined undermines the viability of the picture theory and the project of articulating a general form of the proposition. The resulting tension between logical prefiguration and empirical application is shown to be both deconstructive and philosophically productive. Rather than resolving this tension by appeal to later logical frameworks, the paper adopts a preservationist stance, treating the *Tractatus* as a self-contained conceptual construction whose unresolved difficulties anticipate subsequent developments, including Wittgenstein's reflections on rule-following.

The vast body of philosophical work on the *Tractatus Logico-Philosophicus* by Ludwig Wittgenstein has, in many cases, given rise to a *communis opinio*. The present paper advances a series of theses that depart from this consensus. They take their cue from certain striking features in Wittgenstein's exposition: lines of thought in which something appears to be missing, others that fall outside the expected framework, and finally a set of surprising implications. The aim is to develop, along these fault lines, an interpretive trajectory that brings out unexpected aspects of the TLP. The undertaking is, by its very nature, controversial. Its purpose would be fulfilled if it were to enrich substantive discussion. The argument may be summarised in eight theses:

- (1) Isomorphism is only half the truth.
- (2) No predicate logic is envisaged.
- (3) Propositional variables replace quantification.
- (4) Isomorphism requires prototypes (*Urbilder*) for truth.

- (5) The ontology of the TLP follows from the construction of propositional variables.
- (6) The practice of world-description is incompatible with logic *a priori*.
- (7) A fissure runs through the general form of the proposition.
- (8) The appearance of the “general form of the proposition” is deceptive.

“It is impossible to tell from the picture alone whether it is true or false.” (TLP 2.224)

Jimmy Plourde (Plourde: 2017) has drawn attention to a nuance in Wittgenstein’s terminology: “represent” (*darstellen*) is used for the relation to sense (TLP 2.201), whereas “depicting” designates the pictorial relation. Notably, “depicting” is readily treated as a mapping of reality. A conspicuous exception is non-objective painting. Yet even in everyday contexts one encounters “pictures” devoid of truth-value: photocopies, fingerprints, reflections, the genetic code of identical twins. In such cases no assertion is made; at most, a meta-judgment concerning the relation is appropriate. Wittgenstein’s remark on comparing individual copies of a newspaper addresses the same issue: their juxtaposition is irrelevant to the truth of the report (PI §265). One must distinguish between the provision of expressive forms within a defined pictorial framework and the specific employment of such constructs in support of assertions.

Wittgenstein’s unqualified claim—“*We make to ourselves pictures of facts*” (TLP 2.1)—elides this distinction, with far-reaching consequences. These become evident in connection with two further peculiarities.

“I dissociate the concept all from truth-functions.” (TLP 5.531)

This terse remark has not received the attention it deserves. It constitutes a dramatic rejection of prevailing conception of logic and follows from a central doctrinal decision of the *Tractatus*. Its point is that, in the complex sign of a relation “*aRb*,” “*R*” does not stand for a relation, but for the fact of the collocation of *a* and *b*. No concepts are available to designate the internal

articulation of states of affairs. The consequences are far-reaching. Propositional *pictures* can be true or false depending on whether their internal structure corresponds to the configuration of objects in states of affairs. Propositional (truth-functional) *logic*, however, is not relevant here, where—then as now—quantification would ordinarily enter. What becomes of logic's devices without those semantic resources?

Two fundamental presuppositions must be kept in view. First, the world of the TLP is constituted by states of affairs. They are described by elementary propositions and are mutually independent. Their structure is fixed and evaluated, via the true/false assessment of a given isomorphism, as a correct (or incorrect) representation of the world. Second, Wittgenstein revises the notion of a variable. In propositional logic, variables range over propositions; in predicate logic, they function as indeterminate names over which quantification ranges. Wittgenstein, by contrast, develops a procedure that regulates the description of general features by means of variables. He starts with *Ausdrücke* (“expressions”), propositional constituents that characterise the sense of a proposition (TLP 3.31). Within the proposition, they represent aspects of its sense, depending on their grammatical position. They are directed toward partial aspects of the world to be described—for example, the relation “greater than.” Now, crucially, the specification of their sense is common to a determinate class of propositions. Hence they can be collected and constructed as variables, serving as placeholders for all expressions occupying a given propositional position that concerns (in the example) a magnitude relation. Such “propositional variables” invert the standard understanding of terms and propositions: what is constant is the selected *Ausdruck*, whereas what is variable are those propositions in which it figures as a factor in verification (cf. TLP 3.311).

“An expression has meaning only in a proposition. All variables can be construed as propositional variables. (Even variable names.)” (TLP 3.314)

The first part of this quotation follows from Wittgenstein's reinterpretation of the notion of a variable; the second is striking. Wittgenstein himself, after all, compared names with points and propositions with arrows (TLP 3.144). Let us begin with the most straightforward case of propositional variables, namely those for relations. A coloured world is described by elementary propositions

in which certain *Ausdrücke* serve to represent the colour of the state of affairs to be depicted. In a quasi-elementary proposition such as “Coal is black” the *Ausdruck* “black” stands in for all propositions which, in a proper syntactic position, govern a claim concerning the colour black. Quantification, in this case is replaced by listing all sentences affirming or denying the presence of said colour. How is this to work for names as propositional variables—that is for the *bearers* of such properties? Names cannot be aggregated; they must exhibit a determinate reference.

Names in elementary propositions are not substitutable. They cannot be shared and must be specified by supplementary determinations. In ordinary language, this is achieved by designations of origin and other identifying attributes. Elementary propositions, by contrast, determine the inventory of the world definitively. It follows that their “supplementary determinations” have to be regarded as imperative semantic components, i.e. as included in the name’s sentence variable as “internal relation”, called essential feature in more traditional terms.

“In fact the notation for generality contains a prototype.” (TLP 3.24)

What’s the deal with prototypes? Wittgenstein’s answer is terse and decisive. Suppose that *the bogeyman* belongs to the basic inventory of a fictitious world; then its identification proceeds by means of sets of propositions whose subject-expressions agree in specifying *bogeyman*’s distinctive features. Whereas the terms of standard predicate logic function like hooks on which contents can be hung, propositional variables correspond to the substantive circumstances of the states of affairs they refer to. In an early diary entry Wittgenstein complains, that “logic” strips all their properties from things and propositions (PNL B71). By contrast, his propositional variables fall within the domain of generality. The complex interconnection indicated by sentence variables cannot be captured by first-order predicate logic. The task at hand, therefore, is to explain how the internal pictoriality of propositions is implemented in the world’s description. What is at issue are pictures whose internal pictoriality must be vindicated as propositions true or false.

Wittgenstein's context principle, to which the picture theory conforms, requires that individual items be understood as instantiations of generalities which provide the underlying basis of their actual occurrence. "Prototypes" are the construct that effects this transition from snapshots to substantial names. Wittgenstein offers a vivid formulation: "Even if the sentences which we ordinarily use all contain generalisations, still there must surely occur in them the proto-pictures of the component parts of their special cases." (NB 7.5.15) The particular cases to which properties are ascribed are, according to this remark, determined by prototypes. They shape the individual items they are applied to. This correlation is of decisive importance for the main aim pursued in the *Tractatus*, namely the determination of the general form of propositions. For while the depiction of the world must provide the means to articulate its indispensable structures, propositions—inasmuch as they fulfil this role—fall under the logic of truth-functional connectives.

"It is impossible for words to appear in two different roles: by themselves, and in propositions." (TLP 2.0122)

Ausdrücke occurring within propositions derive meaning from their contribution to the determination of its truth. Since every *Ausdruck* can be represented as a propositional variable, a proposition's understanding requires acquaintance with the totality of references of the *Ausdrücken* included. To know *all objects*, then, is not merely to know the essential characteristics of each individual entity, but at the same time to know the internal relations in which it stands to the essential characteristics of all other entities. (Many persons have crossed the Rubicon at different times; yet it is not recorded that anyone but Caesar was murdered by Brutus.)

In Wittgenstein's framework, internal relations are required for the identification of basic objects, whereas external relations arise contingently. This idea is crucial for the working of the picture theory. Whether Caesar's toga was torn during the assassination is immaterial; by contrast TLP ontology requires essential features. These cannot be specified in a merely punctual manner, nor can they be given by logic *a priori*. Still—another surprise—: *"If I know an object I also know all its possible occurrences in states of affairs. (Every one of these possibilities must be part of the nature of the object.)"* (TLP 2.0123).

By what approach is an object's nature revealed? The internal relations of Caesar just alluded to are formally determined by propositional variables. Since the TLP lacks modal logic rigid designators are not available and necessity in the one given world is constructed on the basis of prototypes.

“The logical propositions describe the scaffolding of the world, or rather they present it. They “treat” of nothing. They presuppose that names have meaning, and that elementary propositions have sense.” (TLP 6.124)

Following the definition of an *Ausdruck* as a constituent of a proposition that (co-)determines its sense (TLP 3.31), “perceptible signs” (TLP 3.11) are employed for depiction. The logic of elementary propositions is subject to a strict rule: *“It is clear that everything which can be said beforehand about the form of all propositions at all can be said on one occasion.”* (TLP 5.47) Two conditions are therefore required to determine the scaffolding of the world: first, knowledge of the structure of elementary propositions must be presupposed; second, it must apply from the outset to the world as a whole. A glance at Wittgenstein's diary entry of 19 June 1915 highlights the problem involved: *“For the question arises: If the individual forms are, so to speak, given me in experience, then I surely can't make use of them in logic; in that case I cannot write down an x or a $\varphi(y)$. But this I can surely not avoid at all.”* This concern, already articulated in 1915, touches the core issue in attempting to specify the general form of propositions. Empirical “logical forms” are neither *a priori* nor discoverable by logic. The phrase “so to speak” signals Wittgenstein's hesitation: self-sustained logic, has “so to speak” to entertain formative connections to states of affairs.

This “so to speak” engenders the task of specifying the logical inventory of elementary propositions *a priori*: *“We now have to answer a priori the question about all possible forms of elementary propositions.”* (TLP 5.55) Those propositions, in virtue of their “internal properties”, exhibit the features of basic facts (TLP 4.123) Objects woven into their nexus are not contingent appearances but implementations of its form (cf. TLP 2.026), autonomous as singular configurations while rooted in the “mycelium” of states of affairs with which they share essential features (cf. 2.0122). (Caesar's fingerprints are doubtlessly part of his unique identity.) Objects cannot be retroactively fitted

into a state of affairs (TLP 2.0121). To know an object is equivalent to knowing all the possibilities of its occurrence (TLP 2.0123).

“We must now answer a priori the question as to all possible forms of the elementary propositions.” (TLP 5.55)

Wittgenstein’s logic stipulates that the world is composed of substantial objects. The possibility of science rests on the fact that the constellations in which they occur are logically articulable—their forms, not their particular instantiations. These latter are accessible only within the application of logic, yet they must be logically prefigured: logic *a posteriori* is not permitted. Herein lies a puzzle. There is no negotiation between the logical framework and its material realisations. *“Logic precedes every experience—that something is so. It is before the How, not before the What.”* (TLP 5.552). The *What* consists of substances; the *How* of their contingent occurrence. Between the two lies the unspoken implication that it must be possible for true propositions describing the world to exactly fit the form prescribed to them by logic. The limits drawn to the world are meant both to hold once and for all and to be confirmed by every meaningful, that is evaluable empirical statement.

Alas, Wittgenstein explicitly rejects the prospect of fulfilling these conditions: *“The elementary proposition consists of names. Since we cannot give the number of names with different meanings, we cannot give the composition of the elementary proposition.”* (TLP 5.55). Largely unnoticed, this shocking statement undermines the whole enterprise. His picture theory in fact depends on the idea that basic propositions, internally prefigured by prototypes, supply the form to which their worldly correlates must con-form. If it is impossible to provide pre-empirical logic with all the patterns required for representation, given the maximal scope of the claim, the project remains unrealisable. *“The application of logic decides what elementary propositions there are.”* (TLP 5.57). It cannot know the answer by itself and it cannot learn it from experience (cf. 5.557). Wittgenstein himself provides an illustrative case: *“How could we decide a priori whether, for example, I can get into a situation in which I need to symbolize with a sign of a 27-termed relation?”* No answer is given. Suppose a credible report is discovered showing that Brutus had merely murdered a double of Caesar. The sentence variable constituting the double's (essential)

name might be exceedingly complex. This might entail that, for “Caesars” actual murderer a 27-termed relation is required. Could this have occurred? It cannot be ruled out *a priori*. Would it undermine the assumption that we are, in advance, informed about all decisive events of ancient history? Certainly.

The appearance of the “general form of the proposition” is deceptive.

Elementary propositions serve as arguments of truth-functions, which in turn yield complex propositions. “*Propositions comprise all that follows from the totality of all elementary propositions ...*” (TLP 4.52). This domain is delimited by “the general form of a proposition” (TLP 6). Operations on elementary propositions, taken as inputs, generate the totality of language. However, “*The occurrence of an operation does not characterise the sense of a proposition.*” (TLP 5.25) It merely governs concatenations of the elementary units of the world’s meaningful basic components. This move mixes two heterogeneous components. The first is the domain of propositional logic, whose validity can be demonstrated formally as correct and complete. The second component, as has been shown, is incommensurable. Lacking quantification, its extensions cannot be predicted. Wittgenstein has created an ontological regime on the basis of propositional variables. The essential features of objects, and thus the limits of the world, are conveyed by a complex design in which logical forms and their empirical instantiations are—incomprehensibly—coinciding.

The generality of propositional logic is not Wittgenstein’s generality. His claim is to have developed, through a hybrid of propositional logic and ontologically grounded propositional variables, the general form of propositions bounding the world. With his admission concerning the unpredictability of arbitrarily many-termed relations, however, he withdraws the very ground from under his endeavour. This is the deconstructive outcome. Its constructive counterpart may, pointedly, be captured in numerical terms: from 27 to 1004. Put differently: the possible occurrence of an unforeseen number in Wittgenstein’s *Tractatus* anticipates his later reflections on rule-following.

References

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