Sense and Substance in Wittgenstein's *Tractatus*

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1. Substance

In the early pages of his *Tractatus*, Wittgenstein says that the *substance* of the world consists of unalterable, simple objects (*Gegenstände*) (2.021, 2.027). Substance is connected to the *Sinn* of a proposition in the following cryptic way:

> "If the world had no substance, then whether a proposition had sense [*Sinn*] would depend on whether another proposition was true." (2.0211)"

> "In that case we could not sketch any picture of the world (true or false)." (2.0212)

How can the sense of a proposition depend on the existence of simple, unalterable objects? No connection between *Sinn* and substance is evident on the basis of these short remarks. Furthermore, the remarks sound strange because elsewhere in the *Tractatus* Wittgenstein makes it clear that we can understand the sense of a proposition without knowing anything about how things actually stand in the world (see e.g. 4.024).

Let us begin by clarifying briefly the concept of 'substance'. In addition to being made up of simple objects, it is said to be that which "subsists independently of what is the case" (2.024). This independence means that the substance of the world provides the building-blocks of all possible facts (of all situations that can "be the case"), but it has nothing to do with how those blocks are actually arranged into facts. In this light the tension between the demands that sense depends on substance and that sense is independent of facts resolves, since substance as such does not determine any particular facts, but provides merely the possibility of all situations (see TLP 2.014).

2. Simple objects and determinate sense

But why must the substance of the world be just like this? Why does it have to consist of objects that are *simple*? This demand flows from Wittgenstein's view of language. Meaningful propositions are, according to him, bipolar: that is, they are either true or false descriptions of the world (there are no further truth-values), and each proposition can be true and can be false. For Wittgenstein, to determine the sense of a proposition is just to determine under what conditions we call the proposition true and under what conditions false, i.e. by determining its truth-conditions. (See e.g. 2.21, 4.01, 4.023, 4.063, 4.2)

The bipolarity of propositions leads to the requirement of *determinate sense*. If a proposition is to "restrict reality to two alternatives: yes or no" (4.023), it must be settled in connection with every state of affairs whether it makes the proposition true or false (and a bipolar proposition cannot 'agree' nor 'disagree' with *all* states of affairs). But this division of all possible facts into two can happen only if the sense of a proposition is unambiguous, i.e. only if it is absolutely clear how things will have to stand if the proposition is true, and (thereby) how they will have to stand if it is false. In other words, it must be clear *which* situation the proposition depicts, and this is clear when in the proposition there are exactly as many distinguishable parts as in the situation – when the two "possess the same logical

(mathematical) multiplicity" (4.04). The logico-mathematical complexity of the depicted situation is not usually visible on the surface of our ordinary propositions; it is revealed only when propositions are analysed into truth-functions of *elementary* propositions. These are fully analysed propositions which depict atomic states of affairs and consist of combinations of simple *names* (4.21, 4.22). A name in Tractarian terminology means an element in a proposition that refers to an object: "A name means [*bedeutet*] an object. The object is its meaning." (3.203) The requirement that such simple signs are possible is the demand that sense be determinate (3.23), and sense must be determinate if the proposition is to be truly bipolar.

Now if the fully analysed proposition consists of simple signs that refer to objects, then these referents must be logically simple as well. If they were complex in a way that characterised the sense of a proposition, then analysis would not be complete and the names would not be truly simple; the logico-mathematical complexity of the situation would not be clearly displayed in the proposition. On the other hand, the demand of bipolarity presupposes an end to analysis; for if the division of the world into simpler and simpler constituents went on infinitely, the truth-conditions of our propositions could never be settled. So if we want our propositions to be true or false descriptions of the world, the world must have a determinate structure which our (analysed) propositions has to reflect – that is, the substance of the world must consist of simple objects which are the referents of names in elementary propositions.

3. *Sinn* and *Bedeutung* in Frege and Wittgenstein

The demand of determinate sense explains why objects (the referents of names) have to be simple. But why should it be impossible to form any pictures at all if there were no substance of the world, as Wittgenstein claims in 2.0211-2? To make sense of this rather radical claim we need to turn to the obvious target behind Wittgenstein's remarks, namely, to Frege and his theory of *Sinn* and *Bedeutung*.

In Frege's *Über Sinn und Bedeutung* the sense of a proposition is not linked in the same way with truth and falsity as it is in Wittgenstein's theory (where the sense of a proposition and its two poles form a whole that cannot be conceptually separated). This is because for Frege, the *Sinn* of a proposition (the thought it expresses) is independent of the *Bedeutungen* of its component parts. Thus, a proposition can be meaningful even if it contains proper names that are 'empty', i.e. if it contains names that lack a referent in reality. This is to be regarded as an imperfection that is quite common in ordinary language: there we often encounter symbols (or combinations of symbols) that are *bedeutungslos* (Frege 1892a, 163). It is an imperfection because such empty symbols render the propositions in which they occur truth-valueless; they cannot be said to be either true or false. However, the important point for us is that in Frege's theory even truth-valueless propositions can have *Sinn*: they can express thoughts that can be grasped. According to Frege,

"[i]f it were a question only of the sense of the sentence, the thought, it would be needless to bother with the *Bedeutung* of a part of a sentence; only the sense, not the *Bedeutung*, of the part is relevant to the sense of the whole sentence. The thought remains the same whether 'Odysseys' [in the sentence 'Odysseys was set ashore at Ithaca while sound asleep'] has a *Bedeutung* or not." (Frege 1892a, 157)

Disregard for the *Bedeutung* of a name is possible for Frege because in his theory names always have *senses*, even if they fail to refer to objects; thus, as long as all the names (and predicates) in a proposition have senses, the whole proposition has sense. Of course, Frege admits, when we want to find out the *truth* of some sentence, then "we also have to inquire after *Bedeutungen*; we have to throw aside proper names that do not designate or name an object, though they may have a sense" (Frege 1892b, 178). In other words, the question whether names have *Bedeutungen* or not becomes relevant when we are interested in the truth-values of our propositions, but it is not relevant when we are concerned with the senses or thoughts that our propositions express.

Now in logic and in science we *are*, according to Frege, concerned with the realm of truth rather than with the realm of sense; therefore in logic it should be guaranteed that all our names really refer to objects (so that we can avoid truth-valueless propositions). This means that in logic we cannot rely only on the *Sinn* of a proposition, for, as we saw, in Frege's theory the sense of a proposition is separated from the *Bedeutungen* of its constituent parts: even if a proposition as a whole has *Sinn*, its names may lack a reference. How can we guarantee that names always have a reference (and that propositions have a truth-value)? One way is to rely on the truths of *other* propositions which assert that the names we use really refer to objects. For example, to be sure that 'A is F' is either true or false, we presuppose first that the proposition 'A exists' is true. To use Frege's own example, it depends on the truth of the proposition 'There was someone who discovered the elliptic form of the planetary orbits' whether the expression 'whoever discovered the elliptic form of planetary orbits' refers to an object or only seems to do so (Frege 1892a, 163). If this expression is *bedeutungslos*, then the whole proposition in which it functions as a proper name – 'Whoever discovered the elliptic form of the planetary orbits died in misery'- is neither true nor false. The presupposition that the proper name designates something is just as much included in the positive as in the negative assertion ('Whoever discovered the elliptic form of planetary orbits did *not* die in misery') (see ibid.). We could capture Frege's position by saying that in order to connect the proposition to a truth-value he needs to rely on the truth of some other proposition. But from Wittgenstein's point of view this means that the *sense* of a proposition depends in such cases on the truth of another proposition; for to have sense *is* for Wittgenstein to be a true or a false picture of the world. Thus, it is reasonable to assume that Wittgenstein has Frege in mind in 2.0211 where he talks of the case where "whether a proposition had sense would depend on whether another proposition was true."

But if the sense of a proposition depends on the truth of another proposition, why should this make it impossible to "sketch any pictures of the world (true or false)" (TLP 2.0212)? This claim of Wittgenstein's starts to make sense if we take him to be reading Frege so that it is *always* possible that names lack referents. This logical possibility (which opens up when the *Sinn* of a proposition is separated from the *Bedeutungen* of its constituent parts) can, namely, lead to an infinite regress of propositions guaran-

teeing each others truth-values, which would indeed make it impossible to sketch true or false pictures of the world. Let us see how this can happen. We saw that if we want to be sure that the proposition 'Whoever discovered the elliptic form of planetary orbits died in misery' is unambiguously either true or false, we need to know first the truth of the proposition 'There was someone who discovered the elliptic form of planetary orbits'. But how can we be sure that this latter proposition is either true or false? Do we not need to know first the truth of a third proposition – such as 'Planets have orbits' or 'There are planets' or 'The Earth exists' – before we can decide whether the conditional proposition is true or false or rather has no truth-value at all? The problem, in short, is this: a proposition which asserts that some proper name has a referent itself contains names which might be empty, and we need new propositions to assert that these names have referents; but these new propositions, too, may contain names whose *Bedeutungen* must be secured by new propositions, etc. Now either this chain of 'back-up' propositions goes on infinitely (for each new proposition contains at least one name of which something is predicated, and this name has a *Sinn* but not necessarily a *Bedeutung*, which must be asserted by a new proposition) and we can never connect our propositions to reality, or we must forestall the regress by stipulating that at some point the *Sinn* and *Bedeutung* of a name coincide. This move would be no less undesirable for Frege since it seems to abolish the distinction between sense and reference of a name altogether.

These problems can be avoided if propositions containing empty names are not allowed to have *Sinn* at all. This is Wittgenstein's solution in the *Tractatus*: if some constituent part in a proposition lacks a *Bedeutung*, the whole proposition lacks *Sinn*. As he says, "if [a proposition] has no sense [*Sinn*], that can only be because we have failed to give a meaning [*Bedeutung*] to some of its constituents." (5.4733) The regress that threatens when the sense of a proposition is separated from the referents of names is thus blocked at the outset by demanding that all names in a meaningful (elementary) proposition must have objects as their *Bedeutungen*, and that these names simply stand for these objects without a mediating 'sense' (on whose mediation we can never count). This in its turn requires of the world that its substance consists of simple, unalterable objects: then our propositions can divide it uniquely into two (they can be truly bipolar) and the referents for our names are secured without any further conditions.

It should be noted that Wittgenstein's demand that all names must have simple and unalterable objects as their *Bedeutungen* does not mean that we cannot talk meaningfully about non-existent things or situations. In ordinary language we often use names that refer to things that do not exist. Nevertheless, we are able to understand many of the propositions in which such names occur, and their truth or falsity can be settled. This suggests that such names are in fact abbreviations of more complex descriptions which consist of simpler elements and which can be true or false. The real function of such a name is not, then, to 'stand for an object' but to describe a complex, and the 'emptiness' of the name means only that the elements of which the complex consists are not so combined as the analysed proposition presents them to be. Thus, "[a] proposition that mentions a complex will not be nonsensical, if the complex does not exists, but simply false" (3.24). But the parts of this complex must exist; in other words, the simple names into which the complex name is analysed must have the subsistent, unalterable objects as their *Bedeutungen*, if the proposition as a whole is to have *Sinn*. Here the influence of Russell's 'theory of descriptions' on Wittgenstein is clearly visible.

4. Concluding remarks

I have argued, after a brief clarification of the concept of 'substance', that Wittgenstein's radical claim that "if the world had no substance, then whether a proposition had sense would depend on whether another proposition was true" (2.0211), in which case "we could not sketch any picture of the world" (2.0212), is understandable against the background of Frege's theory of *Sinn* and *Bedeutung*. Granted that this is so, it is natural to ask: whose view of sense is preferable, Wittgenstein's or Frege's? I shall end by indicating briefly some factors which should be taken into account when deciding this question.

We saw that Frege's separation of sense from reference is problematic, since it makes possible the infinite regress of propositions guaranteeing other propositions' truth-value. Wittgenstein does not want to let the regress begin; therefore he connects the sense of a proposition to the substance of the world in the remarks I started with. Thus, it seems that if we demand that all meaningful propositions must have a truth-value (and, moreover, that each meaningful proposition must be capable of being true and capable of being false), then Wittgenstein's view of sense is to be chosen. Yet Frege's view has its attractions. For example, his view of propositions is closer to common sense than Wittgenstein's austere view, when it lets truth-value-less propositions, too, inside the realm of meaningful language. After all, didn't Wittgenstein himself teach us in his later writings that what we call a 'proposition' is a variety of more or less closely related things, and not just those linguistic entities which can be said to be true or false? However, before discarding the Tractarian view simply because it is foreign to common sense, we should see what led Wittgenstein to reject Frege's theory in the first place. As far as I can see, the initial reason is his dissatisfaction with the account of *logic* Frege advances, and the demand of the essential bipolarity of propositions is a consequence of this dissatisfaction. Thus, when deciding the question whose view of sense is preferable, Frege's or the early Wittgenstein's, one important task (which it is impossible to undertake here) is to compare the merits and faults of the views of logic Frege and Wittgenstein advance.

The second important task is to check whether Wittgenstein's reading of Frege can be sustained. Wittgenstein may not have studied Frege's texts as carefully as is often supposed, and his understanding of Frege's doctrines may have been affected by Russell's reading of Frege. Perhaps Wittgenstein did not have an accurate grasp of Frege's theory of sense and reference? This is an interesting issue which is currently much debated in commentary literature. However, my aim here has only been to view Frege's distinction of sense and reference through Tractarian glasses, whether the lenses distort reality or not.

Literature

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