

The limits of expressing logic according to both early and later Wittgenstein

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In his *Tractatus*, Wittgenstein dedicates some of the most fascinating, yet also most enigmatic passages to the sphere of the mystical. One of the characteristics of this sphere is supposed to be its ineffability. Any attempts to describe it force us to maim the expressive powers of the language we use. Surprisingly enough, Wittgenstein treats logic in a very similar way in *Tractatus*. Logic, then, can only be shown, not expressed. Or, to be more precise, logic can only show itself. This view is sometimes, for instance by Stekeler-Weithofer, seen as refuted by the later development of logic, particularly by the development of the plurality of non-classical logics which purport to study various kinds of reasoning. I will present a perspective from which Wittgenstein is right even in face of the rich plurality of logical systems.

Besides being ineffable, the mystical, as well as logic, is also supposed to be fundamental, in fact much more important than what lies outside it. Therefore, logic also deserves this honourable status, according to Wittgenstein. Nevertheless, logicians today purport to be making explicit all kinds of logical laws which hold in variegated areas, which causes the unprecedented plurality of logics. On the other hand, it is not clear what the import of all this intellectual work is. Is there a lesson to be learned from Wittgenstein for the contemporary philosophy of logic? In order to access this possible lesson, we have to pay attention not only to early Wittgenstein but also to his later development where the notion of game and language game became prominent. I will show that taking seriously Wittgenstein's motivation - which originates in his discussions with Moritz Schlick and his conception of games - to treat our linguistic activities as games, which are partly playful and unserious, shows us the limits of formal logical systems. They are language games themselves but do not understand themselves properly which causes

them to be unsatisfying and turns the plurality of logics into a curse rather than into a blessing, getting us close to the positions of logical nihilists, such as G. Russell, rather than to those of logical pluralists.

A further perspective from which logical systems fail to properly describe laws of reasoning is provided by Wittgenstein in his *On Certainty*. Nevertheless, just as in *Philosophical Investigations*, he does not address logic directly and therefore his argument must be extracted from his writing in a non-trivial way. He sees particularly certain sentences as fundamental for the working of our language games and vice versa. Certainty therefore equals fundamentality. Yet precisely by enabling the language games, these sentences cannot properly enter these language games. Using these sentences in the context of any specific conversation fails to convey their real meaning. When I am looking at my hands and try to formulate the skepticist question whether these are indeed my hands, then, according to Wittgenstein, my interlocutor would typically doubt whether I understand the meaning of the word *hand*. If we apply this reasoning to logic, this would mean that logical laws cannot be expressed. A lot might have changed in Wittgenstein's transition from *Tractatus* to his later thought. Nevertheless, my argumentation suggests that his view of formal logic as a scientific discipline has not changed very much. And the reasons for Wittgenstein's position are still of interest.

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