The structure of First Order logic

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Abstract:
The structure of First Order logic will be described here in its verbal, or explicit (Second Order) form, by means of an "apparent" Zeroth Order form, because the actual pure Second Order form is not axiomatizable. Also, another "apparent" Second Order form will be used to make a Zeroth Order description of the structure, which, without the "apparent" Second Order quantification, would remain silent, or implicit, as that is its pure Zeroth Order form.

The explicit form is 0 to the power of 0, which is the half-formula/half-object half-number/half-set form of the Second Order Categorical theory, and which is not axiomatizable. It can only be referenced as such uncomputable value. Because of its uncomputability, it is vacuously true.

The implicit form can be observed as follows:

$\top \Leftrightarrow \exists(\top) \land \exists(\bot)$
$\bot \Leftrightarrow \neg\exists(\top) \land \neg\exists(\bot)$
$\forall\Phi(\exists(\Phi) \Leftrightarrow (\Phi \Leftrightarrow \Phi))$

There, it can be seen that $\top$ and $\bot$ are linked in First Order logic, and that in it, an unknown arises, of the kind "Then which one comes last, or actual? $\top$ or $\bot$?" (and the answer is 0 to the power of 0); but that does not change the fact that logic is still logical within Zeroth Order domain and absurd is still absurd within Second Order domain.

References:

For the explicit form, my previous article, titled "The four Second Order axiomatizations of the Categorical theory", that can be found at:
http://vixra.org/abs/2505.0178

Widespread mathematical knowledge, for the implicit form.