1116-03-1649 **Joachim Mueller-Theys*** (mueller-theys@gmx.de). *Does the Consistency Sentence Really State Consistency?*

The *Second Incompleteness Theorem* actually makes 2 assertions:

(1) Con_Σ states that Σ is consistent;

(2) $\Sigma \nvdash \mathrm{Con}_\Sigma$ if $\Sigma \supseteq \Sigma_{\mathrm{PA}}$ is consistent.

(1) had no explicit definiens.

If (1) is—as the definiendum, lacking another statement of place, suggests—related to (the theory of) Σ, then, as we will show, (2) implies *non* (1), whence (1) & (2) becomes a *contradiction in terms*. In addition, the generalisation: κ states consistency, cannot be fulfilled at all.

If Σ is decidable, (1) becomes true *in* $\mathrm{Th}\,(\mathcal{N})$, the deductively inaccessible theory of arithmetics.

More innately, κ states that Σ is consistent :iff $\Sigma \nvdash \kappa$. Consequently, if Σ is consistent, all of the then existing κ, unprovable from Σ, state this, and, if Σ is inconsistent, *no* κ states that Σ is consistent. If (1) is interpreted in this way, (1) follows from (2), but Con_Σ *is not distinguished from any other* $\Sigma \nvdash \kappa$.

Compare the ASL abstract. Joint work with Wilfried Buchholz. (Received September 23, 2015)