

statement. Your purpose is not to convince the jury that you are not a knave, but only that you are innocent of this crime. What would you say?

SOLUTION: Let G_A mean that A is guilty. Whatever consequence operator Cn is appropriate to the situation of the puzzle, it must satisfy $A \triangleleft \alpha \rightarrow (T_A \rightarrow \alpha) \wedge (F_A \rightarrow \neg\alpha) \in Cn(\emptyset)$. The aim of the puzzle is to find a sentence α with $\neg G_A \in Cn(\{A \triangleleft \alpha, G_A \rightarrow F_A\})$. Because

$$\begin{aligned} Cn(\{A \triangleleft \alpha, G_A \rightarrow F_A\}) \supset Cn(\{T_A \rightarrow \alpha, F_A \rightarrow \neg\alpha, G_A \rightarrow F_A\}) = \\ = Cn(\{\neg T_A \vee \alpha, \neg F_A \vee \neg\alpha, \neg G_A \vee F_A\}) \ni \neg\alpha \vee \neg G_A \end{aligned}$$

we see that $\alpha = G_A$ fits our expectations and in order to be judged innocent, one must say, he is guilty!

References

- [1] Smullyan R. M., *What is the Name of This Book?*, Prentice-Hall, inc, Englewood Cliffs, New Jersey, 1978.
- [2] Smullyan R. M., *The Lady or the Tiger?*, Oxford University Press, 1991.

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