*Signs of* $S_0$: $\varphi$, *, N.

*Preliminary definitions*: (1) By an ***expression*** (of $S_0$) we mean any string built from the three signs of $S_0$. (2) By the (formal) quotation of an expression, we mean the expression surrounded by stars. (3) By the ***norm*** of an expression, we mean the expression followed by its own (formal) quotation.

*Formation rules for (individual) designators*

(1) The quotation of any expression is a designator.

(2) If E is a designator, so is ⌜NE⌝ (i.e., 'N' followed by E).

*Alternative definition*

(1)' A designator is an expression which is either a quotation (of some other expression) or a quotation preceded by one or more 'N's.

*Rules of designation in* $S_0$

R1. The quotation of an expression E designates E.

R2. If $E_1$ designates $E_2$, then ⌜$NE_1$⌝ designates the ***norm*** of $E_2$.

*Definition of a sentence of* $S_0$

(1) A sentence of $S_0$ is an expression consisting of '$\varphi$' followed by a designator.

*The semantical system* $S_P$

For any property $P$, we define the semantical system $S_P$ as follows:

(1) The rules for designators, designation and sentence formation in $S_P$ are the same as in $S_0$.

(2) The rule of truth for $S_P$ is the following:

R3. For any designator E, ⌜$\varphi$E⌝ is true in $S_P \underset{\mathrm{df}}{\equiv}$ the expression designated by E (in $S_P$) has the property $P$.

THEOREM 2.1. There exists an expression of $S_0$, which designates itself.

PROOF. '*N*' designates 'N' [By Rule 1].

Hence 'N*N*' designates the norm of 'N' [By Rule 2] which is 'N*N*'.

Thus 'N*N*' designates itself.

THEOREM 2.2. There exists a sentence $G$ of $S_0$, such that for any property $P$, $G$ is true in $S_P \Longleftrightarrow G$ has the property $P$.

PROOF. 'N*$\varphi$N*' designates '$\varphi$N*$\varphi$N*' [By R1 and R2].

Thus $G$, viz., '$\varphi$N*$\varphi$N*' is our desired sentence.

REMARK. $G$ is, of course, the formalized version of '$W$ contains the norm of '$W$ contains the norm of'.' '$\varphi$' is but an abbreviation of '$W$ contains,' and 'N' abbreviates 'the norm of.'[7]

[7] If we wished to construct a miniature system $L_P$ which formalizes the diagonal function in the same way as $S_P$ does the norm function, we take four signs, viz., '$\varphi$', '*', '$D$', 'x', and the rules $R_1$, (same as $S_P$), $R_2$: If $E_1$ designates $E_2$, then ⌜$DE_1$⌝ designates the diagonalization of $E_2$ (i.e., the result of replacing each occurrence of 'x' in $E_2$ by the quotation of $E_2$), $R_3$: If $E_1$ designates $E_2$, then ⌜$\varphi E_1$⌝ is a sentence and is true in $L_P$ if and only if $E_2$ has the property $P$. Then the expression of Theorem 2.1, which designates itself, is 'D*Dx*', and the Tarski sentence (of Theorem 2.2) for $P$ is '$\varphi$D*$\varphi$Dx*'.