those $x \notin S_0$ with $\sigma x \in S_1$, and those x with $\sigma x \notin S_1$. Define $\phi_0 x = 0$, 1, or 2 accordingly. Then, ϕ_0 on S_0, with the usual characteristic function ϕ_1 of $S_1 \subset X_1$, is an arrow $\phi = (\phi_0, \phi_1)$ to the object Ω displayed below,

$$\begin{array}{lccc} X: & X_0 & \xrightarrow{\sigma} & X_1 \\ \phi\big\downarrow & \phi_0\big\downarrow & & \big\downarrow\phi_1 \\ \Omega: & \{0,1,2\} & \xrightarrow[\sigma]{} & \{0,1\}, \end{array} \qquad \sigma 0 = 0,\ \sigma 1 = 0,\ \sigma 2 = 1,$$

in $\mathbf{Sets}^{\mathbf{2}}$, and $S_0 \to S_1$ is the inverse image of $(\{0\} \xrightarrow{1} \{0\}) = 1 \rightarrowtail \Omega$.

In brief, this characteristic function $\phi = \langle \phi_0, \phi_1 \rangle$ is that arrow which specifies whether "x is in S" is "true" always, only at 1, or never. One may say that ϕ gives the "time till truth".