The Origin of Excluded Middle in the Extensional Bifurcation of Predicate

$\mathtt{x}$ and $\mathtt{y}$ are at least weakly indiscernible if

$$\forall \mathtt{F}\ \forall \mathtt{G} \quad (\mathtt{Fx} \Leftrightarrow \mathtt{Gy}) \wedge (\mathtt{Fy} \Leftrightarrow \mathtt{Gx}) \quad \Rightarrow \quad \forall \mathtt{z} \neq \mathtt{x}, \mathtt{y} \quad \mathtt{Fz} \Leftrightarrow \mathtt{Gz}.$$

$\mathtt{x}$, $\mathtt{y}$, $\mathtt{F}$ and $\mathtt{G}$ may essentially be defined inter-dependently. The extensional fate of $\mathtt{F}$ is tied to that of $\mathtt{G}$ if there is $\mathtt{x}$ such that $\mathtt{Fx} \Leftrightarrow \sim \mathtt{Gx}$ or there is also $\mathtt{y}$ such that $\mathtt{Fx} \Leftrightarrow \mathtt{Gy} \Leftrightarrow \sim \mathtt{Fy} \Leftrightarrow \sim \mathtt{Gx}$. Either $\mathtt{FxGy}$ or $\mathtt{FyGx}$ but not both.