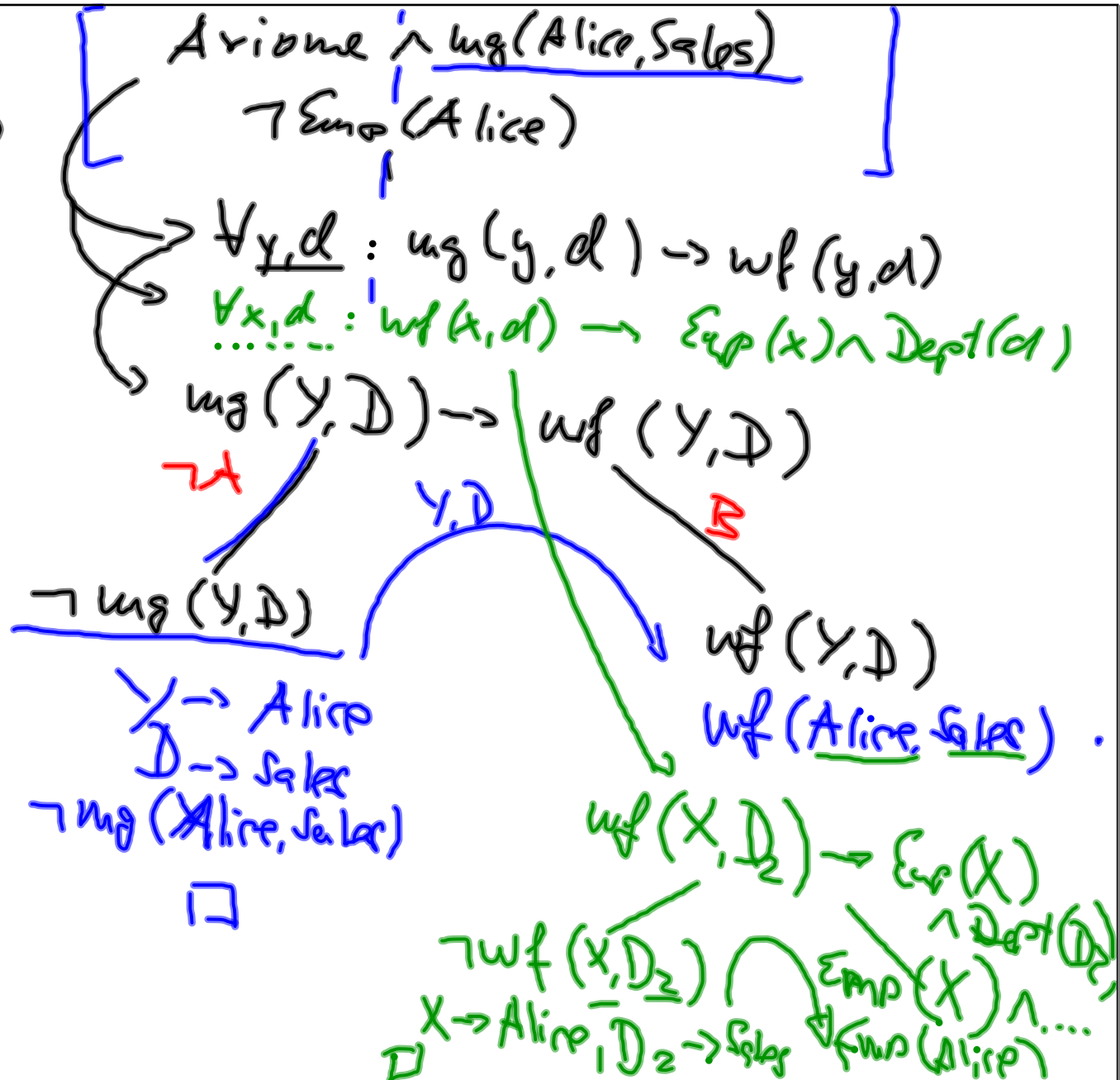


$A \rightarrow B \quad \textcircled{\otimes}$
 $\neg A \vee B$



FOL 2-var

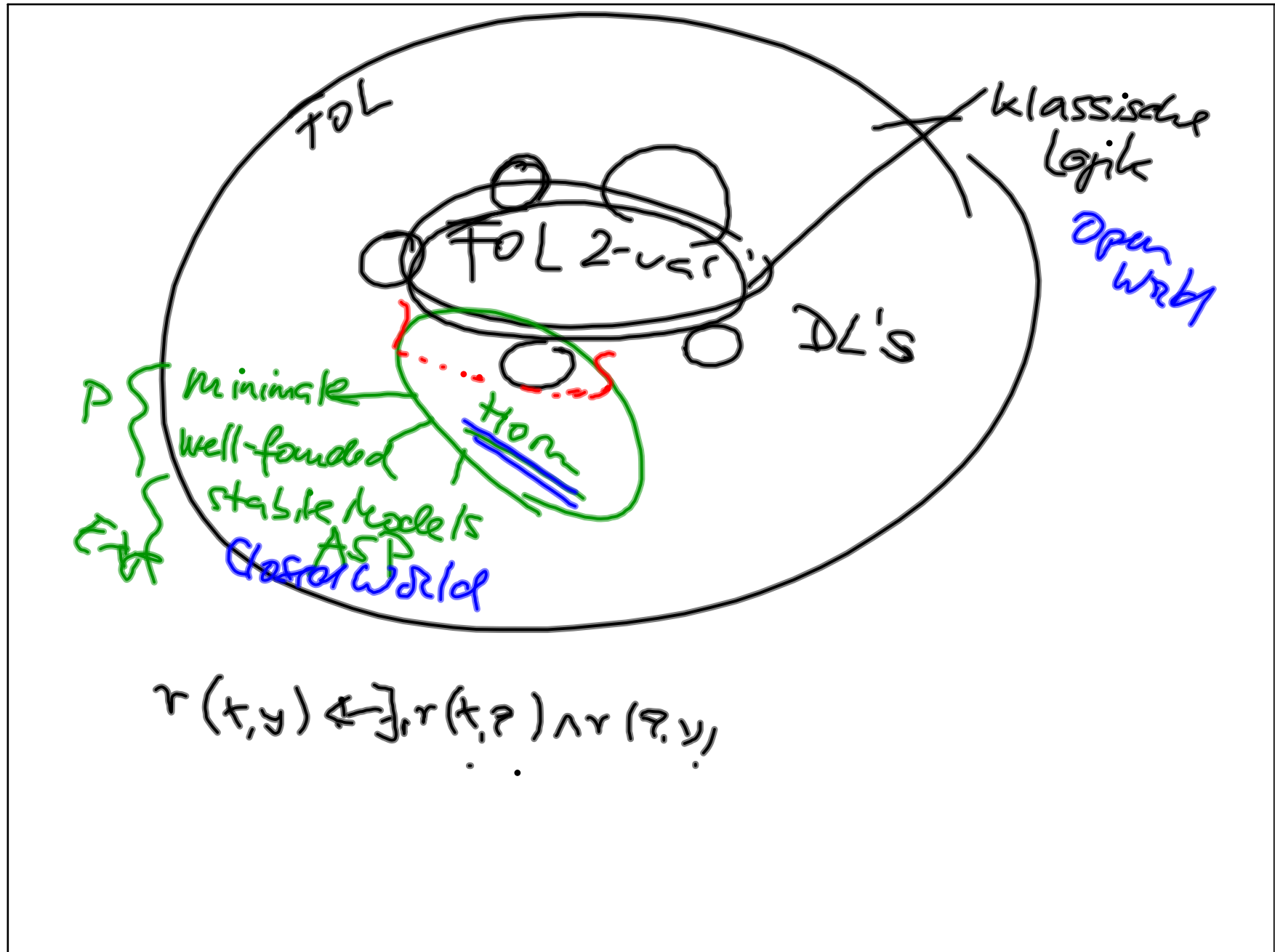
$$\forall x, y: P(x, y) \leftrightarrow q(x) \wedge r(y, x) \wedge s(y)$$

$$\forall x, y: P(x, y) \leftrightarrow (\exists x: r(y, x)) \vee s(y, x)$$

$$\forall x, y: \text{uncle}(x, y) \leftrightarrow \text{parent}(x, z) \wedge \text{child}(z, y)$$

$\forall y: \dots$
 $\text{parent}(x, z)$ $\text{child}(z, y)$
 \uparrow \uparrow \uparrow
 z z z

prop. for-Prop



$F \models \text{child}(\text{John}, \text{Bob}) ?$

Ja.

$F \models G$

$\exists N, D: \text{conv}(N, "D", P)$
 $\exists N, D: \text{conv}(N, "D", P)$
 $N / \text{"Deutsche"}$
 $P / 135000$

↓ ↓

ja/nein

$$\begin{aligned}
 & \exists CN, P, A, (G) \\
 F(C) &= \text{Conty}(CN, C, P, A, (G)) \\
 & \wedge \forall \text{cityname}: \\
 & \exists \text{Pop}, L_1, L_2: \text{City}(\text{cityname}, C, \text{Pop}, L_1, L_2) \\
 & \rightarrow \text{Pop} > 1.000.000
 \end{aligned}$$

DB: closed world: alle Cities, die in DB existieren

KB: weiß nicht, es kann ja weitere Plätze geben!