

### ASP vs Datalog

- classical Datalog
  - Positive Programs: Minus/Model, Resolution proof
  - stratified Programs (Datalog): nearly the same
- well-founded Datalog
  - local stratification  $\rightarrow$  instance-based/constants-based
  - $T^w$  ... alternating fixpoint  $L$ -times  $T^w$
  - $P_{ground}(x_i)$   $\uparrow$  ground program
- stable models:
  - + guess or create stable models candidates (exponential)
  - + check candidates  $\mathcal{K}_1 \dots \mathcal{K}_n$
  - $T^w$   $\uparrow$   $P^i$   $\leftarrow$  polynomial  $\uparrow$  ground

rules: don't head if body (with free variables)  $\leftarrow$  procedural idea

$P = (P_0, P_1, P_2, \dots, P_n)$

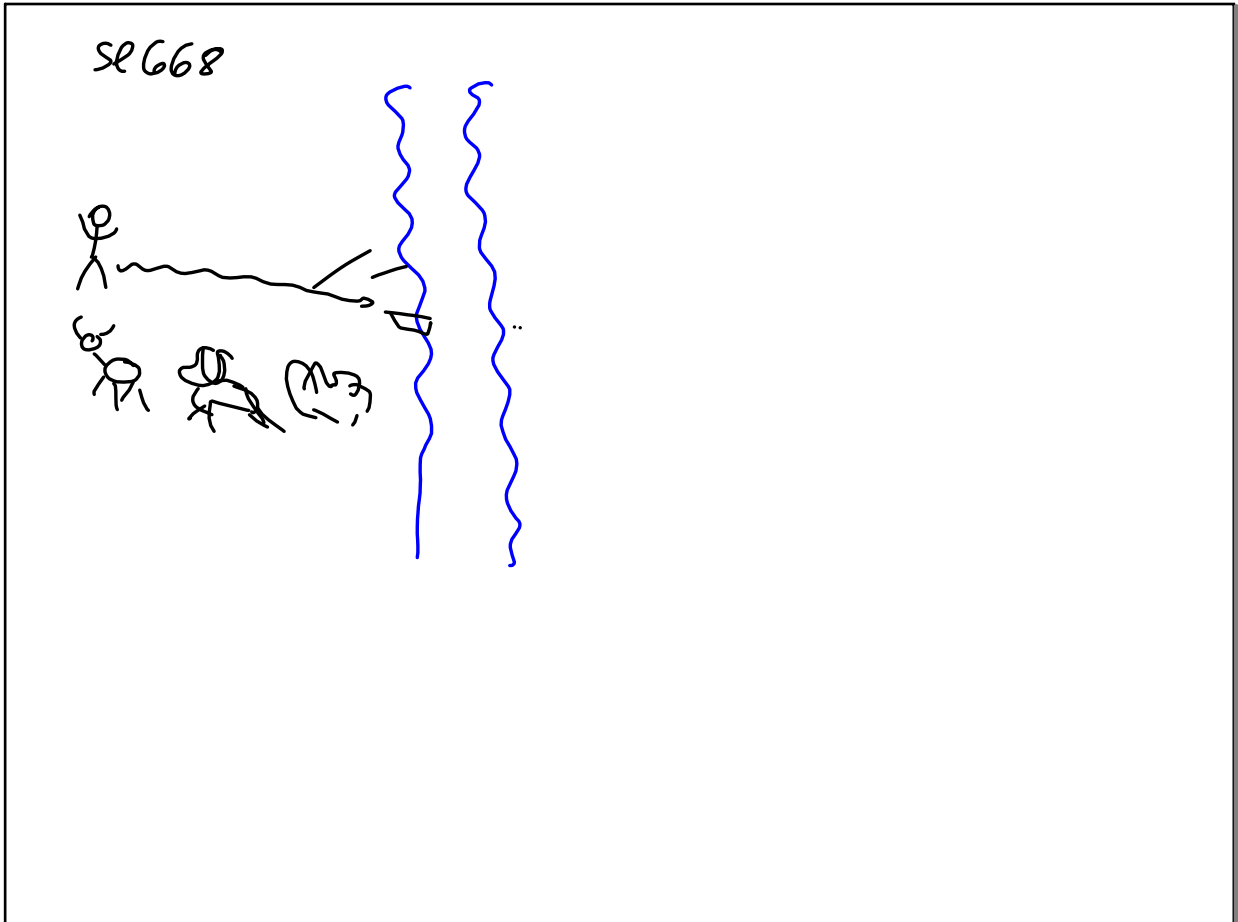
**ASP:** rule syntax extended (heads...)

"Programming language": ground rule instances  $\hat{=}$  not purely as rules "bottom-up", but CONSTRAINTS

based on stable models theory

- create stable models candidates
- check them for stability

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