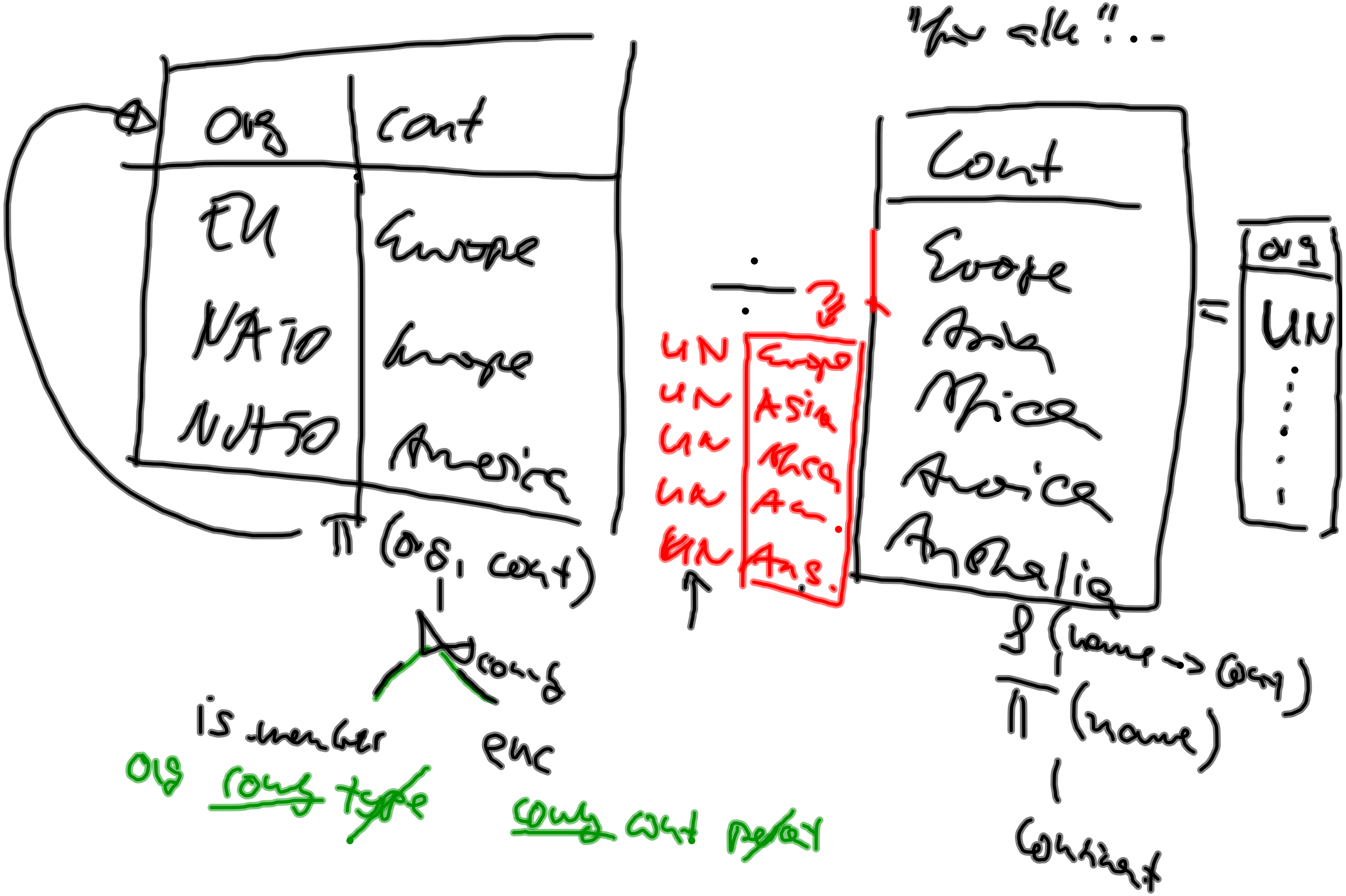

"für alle"...
org
cont
EU
Europe
NATO
America
π (org, cont)
is member
enc
Cont
Europe
Asia
Africa
America
Australia
UN
org
UN
ρ (name → cont)
π (name)
continent

Algebra vs Calc.

- Basisausdrücke

→ Terme

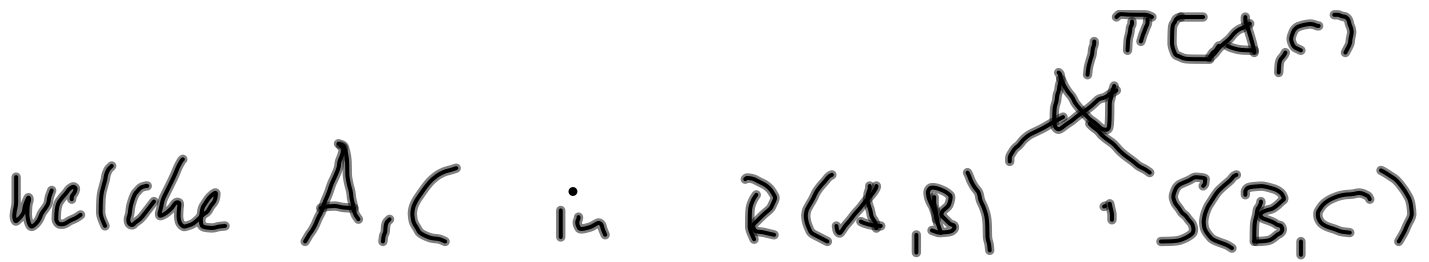
r(A, B, C...)

r(a).

Config ("Germany").

⇒ Formeln

r1 ∧ r2



$$F(x,z) = \exists y \; R(x,y) \wedge S(y,z)$$

Datalog Query

```
?- R(X,_Y), S(_Y,Z).
X/...
Z/...
```

$\mathcal{G} = (I, \mathcal{D})$

$\Sigma = \{R/1\}$

$I(R) = \{(1)\}$

$\mathcal{D} = ?$

$\neg R(x)$

$x/1 \rightarrow 1$

$x/2 \rightarrow 1$

$x/3 \rightarrow 1$

$\Delta = \{1,2,3,4,5,6\}$

$x/4 \rightarrow$

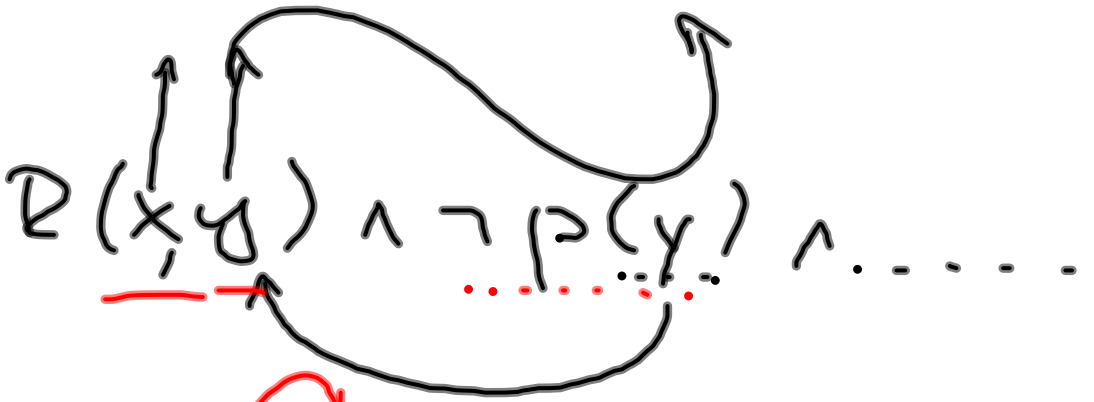
$x/5 \rightarrow$

$x/6 \rightarrow$

$\Rightarrow$ all objects are in the DB domain

relevant since

$\Rightarrow$ Active Domain



$R(x,y,z) \wedge \neg(S(x,y) \vee T(x,z))$

de Morgan

nicht safe

$\forall x,y,z,A$ $R(x,y,z) \wedge \neg S(x,y) \wedge \neg T(x,z) \wedge z = A$

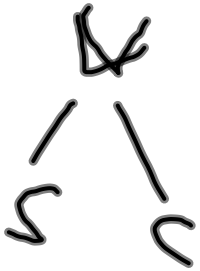
$\Rightarrow$ safe

$$\text{uncleOf}(X,Z) \leftarrow \exists Y: \text{sibling}(X,Y) \wedge \text{child}(Y,Z)$$

$$\text{uncleOf}(X,Z) \text{ :- } \text{sibling}(X,\_Y) \wedge \text{child}(\_Y,Z)$$

SQL

```
Create view uncle as
  Select sibling.1, child.2
  from sibling, child
  where sibling.2 = child.1
```



married/2 $\mathcal{D}$ = { john, mary, ... }

I(married) = { (john, mary), ... }

HD = { john, mary, ... }

HI(married) = { (john, mary), ... }

∋ ← married(john, mary). → atomare Formel

Herbrand-Interpr. — DATENBANK

Atom

" Faktum